Making Gallup Mines Safe, page 869

COAL AGE

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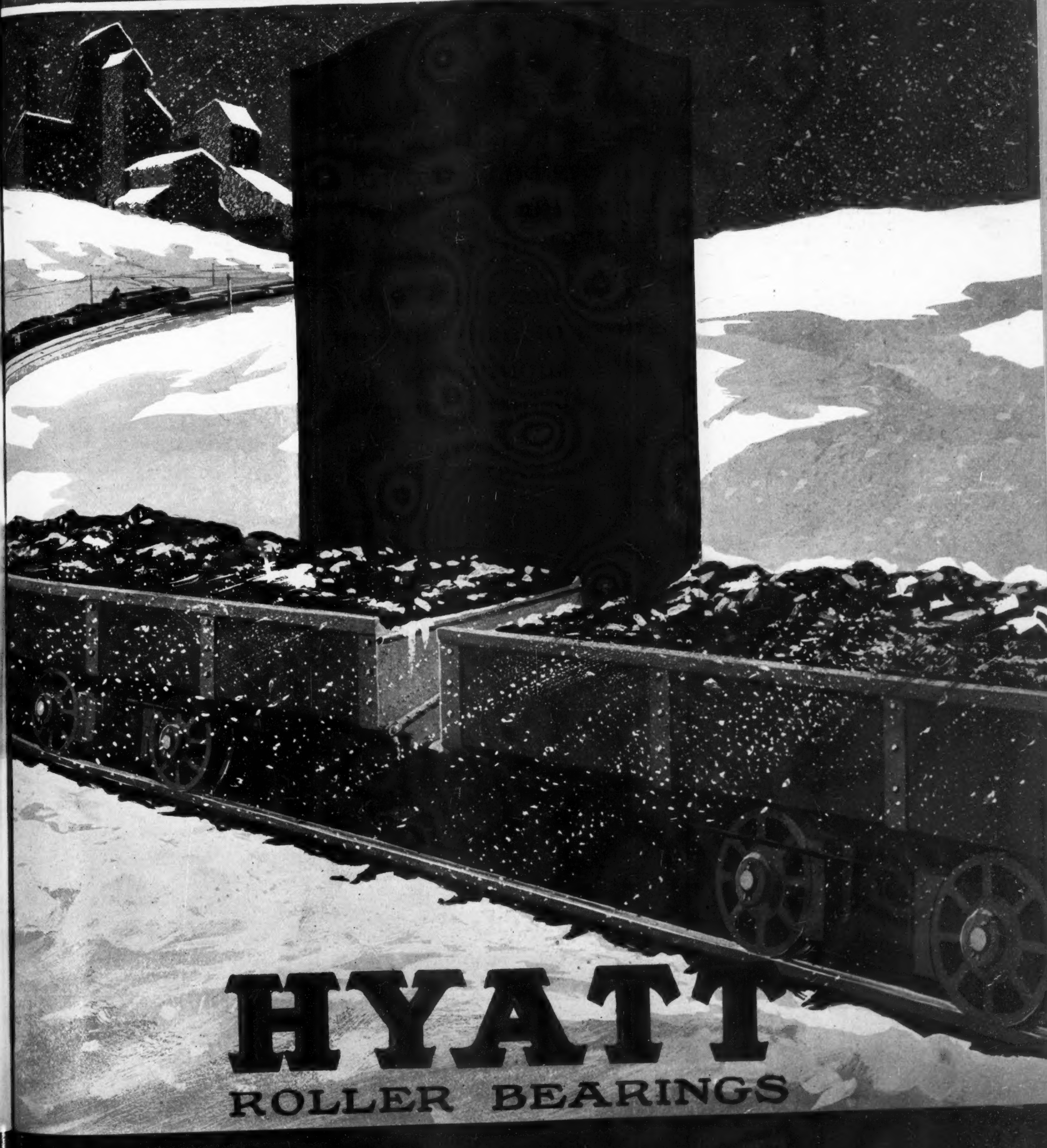

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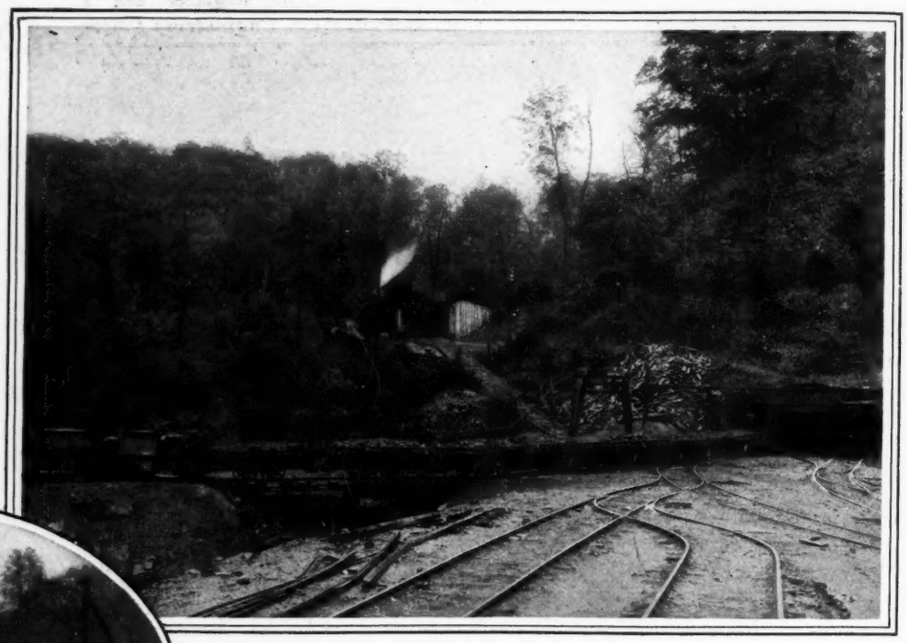

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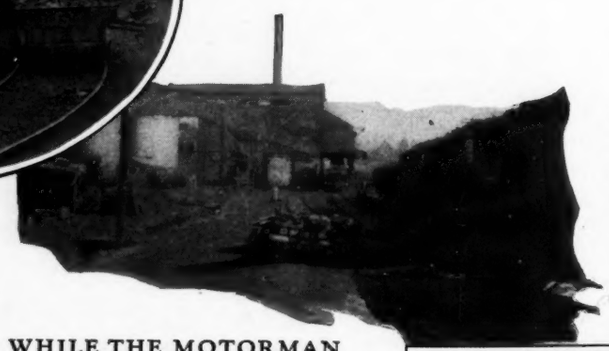

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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

Volume 30 — New York, December 23, 1926 — *Number* 26

COAL AGE

With which is consolidated "The Colliery Engineer" and "Mines and Minerals"
R. DAWSON HALL, *Engineering Editor*

Greetings

To all those who mine coal; to those who prepare it for market; to those who ship or transport it; to those who use it either raw or after processing; to those who manufacture or utilize its direct byproducts such as coke, gas, tar and the like or its indirect byproducts such as perfumes, dyes, drugs, chemicals, medicines and explosives; to all those who cook their food or warm their homes by its aid; to all those who generate or use electric current produced from the thermal energy of burning fuel; in short, to all those whose business it is to wrest from the grip of Earth the fossilized sunlight of past ages, to set free its heat and utilize its thermal and chemical treasures in the service of man *Coal Age* wishes

A MERRY CHRISTMAS

and

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Devoted to the Operating, Technical and Business
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R. DAWSON HALL
Engineering Editor

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Mind and Mine

A MODERNIZATION OF MIND is as essential as modernization of the mines. One might even say that they are synonymous, so interdependent is one upon the other. For unless the guiding mind is ever alert to the possibilities offered for and by modernization; unless it is willing seriously to study and consider the possible advantages of all that is new; unless it is kept out of the rut of self-complacency; and unless it rids itself of the belief that the old order of things is as good as, or better than the new, modernization of the mines can never occur. An open mind is more essential than an open check book, for liberal expenditures, poorly and unwisely made, are not indicative of modernization nor are they apt to produce it.

Working Time

WORKING HOURS are getting shorter. Individual employees work fewer hours than in years past. Brain workers rarely now go to the office, after the evening meal, to labor from 7 to 10 as in time past. Arrivals at the office are less early, and vacations are more general. Physical laborers no longer put in a 10- or a 12-hr. shift. But a greater proportion of all the people in the United States may be employed in industry than was the case twenty years ago.

There are many factories employing female labor. Married women are working in offices, often alongside their husbands. Self-supporting spinsterhood has become honorable. Domestic service is a declining calling, and the wives who formerly supervised servants have rolled up their sleeves, if they have them, and have gone to work in their own homes. Perhaps if the truth were known we should find that the working hours per inhabitant of the United States have increased.

Perhaps then, the industriousness of the public may be credited with some of the general well-being. It might be well to make sure of it before concluding that "the more leisure, the greater prosperity" and that "the trouble with us today is that we do too much work."

"White Collared" Electrical Engineers

AMONG THE FACTORS contributing to the increased percentage of coal mine disasters due to electricity, Daniel Harrington, in speaking before a recent meeting of the American Institute of Electrical Engineers at Salt Lake City, included this: "'White collared' electrical engineers frequently map out elaborate underground electrical systems but seldom if ever go underground to aid in correct or safe installations, or to look things over during operations to see that the system is operating as designed."

Considering the number of electrical engineering graduates that are serving their apprenticeship in mine installation and maintenance work and the many electrical engineers who frequently don their mine clothes and spend a day or several consecutive days in investigating the operation of equipment, Mr. Harrington's statement or indictment is perhaps somewhat too sweeping. But at that, it is granted that the average coal mine electrical engineer does not spend as much time inside the mine as he should. But the reason is not because he is lazy, and perhaps indifferent to the best interests of the company; usually he would like to spend more time inside but is prevented by indifference on the part of the management. Unless the electrical engineer is given definite authority to check up the operation of inside equipment and unless the local superintendents or foremen are appraised of the authority and induced to assist the electrical engineer in the work, he can accomplish but little.

Instances are not uncommon where the local men contrive small obstacles, making it difficult for the electrical engineer to make observations and tests inside of the mine, particularly on equipment that is operating far from the shaft bottom or mine opening. They fear his recommendations as a reflection on their supervision, instead of soliciting these recommendations in the interests of safety and better operation.

The management should be sure that it has the right man as the electrical engineer and then, remembering that his work must naturally include some faultfinding with operating methods, stand squarely behind him in securing the greatest possible results from his knowledge, observations and recommendations.

Fuses and Fines

DOWN IN WEST VIRGINIA a few days ago a miner was fined $50 and costs for using a short fuse in shooting coal, this being a violation of the state mining law. Charges were made against him by the district mine inspector.

The use of short fuses and "skin-'em-backs" has much declined since the introduction of permissible explosives and electric detonation. Probably, also, education along safety lines has had its influence. Use of short fuse can in no sense be condoned as carelessness; it rather partakes of the nature of deliberate villiany. Fortunately a short fuse does not increase the danger of the shot except to the man who fires it or to those in the immediate proximity. It does not augment liability to a blownout shot or the ignition of gas or coal dust above that of a shot that is fired by normal and regular means.

The old-fashioned fuse is—or should be—considered, sufficiently dangerous to satisfy anyone without adding to the peril of its use by cutting it short. Despite state laws to the contrary, the very existence of which ought to be conclusive evidence to most men that the practice covered by them is dangerous, some individuals insist on "being smart" and risking their own lives. Such men can expect small sympathy from the public or from others of their own calling when they are detected and haled into court.

Extending a Good Idea

THE AUTOMATIC SUBSTATION circuit breaker with its many late improvements incorporating the reclosing feature has done much to eliminate the annoyances and loss of time formerly experienced when power delays occurred on main circuits. The success of these switches has made possible the sectionalization of the power system into several independent supply feeders without additional manual attendance and without other supervision than occasional inspection.

With a full grasp of the advantages of this apparatus there has sprung up a demand for still further sectionalization of feeder circuits inside the mines nearer the working faces. Now, operators and engineers are keener than ever to prevent difficulty with one machine affecting several others which ordinarily could be kept in operation. The usual type of knife-blade feeder or trolley switch does not meet this requirement because of the danger which would exist should the circuit be opened by such devices when a load was on the line.

Obviously, the switch best fitted for this condition must be simple, must open automatically and safely extinguish any arc formed while being opened under load. Wide use of such a device will undoubtedly do much to prevent fires, equipment abuse and undue delays.

The Suggestive Effects of Permissible Equipment

TODAY ALMOST EVERY mining operation performed by electrical energy can be accomplished through the medium of permissible equipment. This year the approvals of such equipment by the Bureau of Mines have been unusually large and rapid.

What effect the adoption of this apparatus may have in the future use of electrical equipment in gaseous and non-gassy mines is not difficult to foretell. Already the experiences of manufacturers and operators tend to indicate two important trends. First, some manufacturers have come to believe that rather than continue to make equipment of both the permissible and non-permissible types they will eventually standardize upon the permissible variety and make the non-permissible equipment "special." This indeed is much the same as the condition now rapidly being approached in the automotive industry; closed cars are becoming the standard type and the open models are "specials."

The other important change brought about by permissible equipment is its suggestive effect. Mines not considered gaseous or particularly dangerous because of gassy conditions will undoubtedly use permissible equipment because it will not cause fires or subject the workmen to electrical shock.

Also better operating records of face machinery, made possible by the use of storage-battery power units, for driving face equipment, have done more to prove the advantage of good voltage regulation than many arguments previously set forth for the use of better feeder circuits and good track bonding.

Rubber-sheathed cables, suggested and required for most permissible equipment, have proved their advantages on other than this type of apparatus. They are now quite generally used on all varieties of portable machines as well as on cable-reel locomotives. New cable connectors originally designed for the ends of cables supplying energy to permissible equipment have also found wide service wherever a safer and surer cable tap has been desired.

Thus the suggestive effect of permissible equipment bids fair to completely revolutionize the application of electrical devices underground wherever hazards due to abuse, rapid deterioration, fire or shock exist.

Modernization

AS APPLIED SPECIFICALLY to mines, modernization refers to the application and adoption not only of the latest mechanical and electrical equipment but also of the newest developments in methods of mining and preparation. It necessitates the establishment of power-distributing stations at or near the center or centers of load; the manufacture of current where economic conditions dictate this course and its purchase in those instances where the generation of energy is economically unsound. It further implies the consolidation of numerous small properties or mines into fewer and larger operations where such a course will tend toward economy. It means the adoption of the best systems of mine management and production control suitable to each particular operation, a sound merchandising program and a just labor policy. In brief, modernization is progressive and efficient operation—the policy to which all big business is today necessarily dedicated.

Progress in Competition

PROGRESS THRIVES under the fiercest competitive conditions. By courage to go forward to better methods, to experiment with the possible because it offers opportunities, the coal industry in Illinois has made great progress in mechanization.

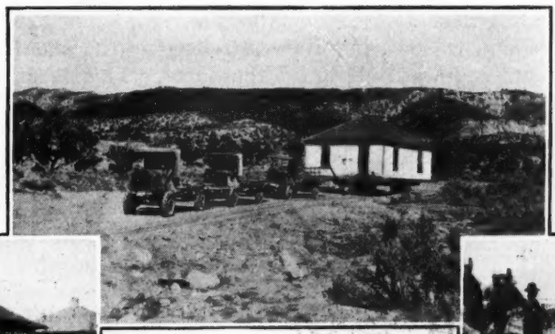
There is in mechanical loaders an object lesson to labor. With the same production per man, Illinois could not compete with other districts whose wage scale is lower. In the problem in this state two parties are concerned: the mine owners and the mine workers. Here the various problems of machine loading are being solved. Based upon progress made up to the present, the use of the loading machine is sound; the pioneer work has been done; improvements are next.

Increased production per man in America has successfully warded off the competitive low-wage products of other nations. As America stands in relation to world industry, so stands Illinois within the American coal industry. Surrounded by districts that compete with it in the same markets and whose only advantage is that of lower wages, Illinois stands to lose her markets to those who are her natural competitors. The state is further menaced by those whose lower wages may overcome a considerable freight-rate differential.

Labor must have wages upon which to live. Mines must earn profits with which to pay wages. The solution of this problem rests not alone upon the operators, for the miners owe a duty to themselves and to their employers and they must help to solve those problems which confront their industry. Higher production per man per day is a goal for which both must strive.

Wages and profits based upon services rendered is economically sound and is good business. The incentive to produce more is the earnings which accrue to this higher production. Management must seek out the analytical methods that stop the little wastes and which tend ever toward the continuity of operations.

Below — Company's Offices; First-Aid Building on Right



Below — Contest in First Aid to Injured, Company Meet

Above — Moving House from Heaton to Gamerco

Careful Operation Makes Gallup Mine Safe

Shotfirers and Firebosses Go in Mine Together at Close of Day Shift—Faces Examined Again Before Men Return to Work—Operating Forces Reduced When Demand Slackens—Causes of Mine Accidents

By R. Dawson Hall
Engineering Editor, *Coal Age*, New York City

AT THE NAVAJO, No. 5, mine, Gamerco, near Gallup, N. M., an operation of the Gallup American Coal Co., well adjusted precautions are taken for the prevention of accidents, and this care is, moreover, not the outcome of any disastrous experience in the Gallup field as it has been in some others, for that region has been free of any distressing catastrophes.

"Safety in operation," said C. P. Tolman, one-time president of the National Safety Council, "is only good engineering," meaning that he who plans for safety attains economy and certainty in operation also, and he who plans for efficiency and reliability in operation will be rewarded with safety. Safety and success go hand in hand.

At Navajo No. 5, the main stress of the management is laid on safety, but the inevitable result—an economically operated plant—is nevertheless achieved as surely as if the only consideration had been engineering efficiency. Visiting the mine the engineer might note only the excellence of the equipment for attaining economical and steady performance, but the real motive at Gamerco is "safety first."

The Gallup area, as has been stated, fortunately, has not had any major disasters to bring home to its mine operators the importance of precaution. "During recent years," says a report of the U. S. Bureau of Mines, "the coal seams near Gallup, N. M., have been free from explosions, but people acquainted with the field have stated that about 30 years ago one or two explosions occurred in these seams due to a blown-out shot of black powder. Tests at the Bureau Experimental Mine showed definitely that dust from the Navajo No. 5 seam (worked in this mine) is explosive." On one occasion the company constructed a wood gallery and spread dust from its tipple on shelves in this structure. This was ignited by a blown-out shot, and the resulting explosion was sufficient to convince everybody who saw it that the precautions the company was taking were well justified. This explosion was photographed, and an illustration, Fig. 1 on the succeeding page, shows the outcome of the experiment.

The Bureau of Mines has ascertained by tests that to be inert the rib and road dust at the Navajo No. 5 mine should contain 60 per cent of incombustible matter. A volumeter is used to test the samples of dust taken in the mine. By this means the exact percentage of active and inert matter in the dust can be determined in a few minutes. The greatest hazard in the mine is the possibility of a wrecked trip causing coal dust to be suspended in the air which would be ignited by an arc from the trolley wire.

The inert dust used in the workings is made from gypsum obtained from a quarry near Albuquerque, N. M. This is crushed in a hammer pulverizer at the mine. The U. S. Bureau of Mines reports the analysis of the dust as received to be as follows: Ash, 79.8 per cent, total water (free and combined) 19 per cent and carbon dioxide, 1.2 per cent. As this totals 100 per cent, all the dust is incombustible. The acid insoluble matter is 6.6 per cent. "As this latter material," says this report, "must include any free silica or quartz that may be present, this constituent must comprise less than 6.6 per cent. The dust that passed through a 20-mesh screen constituted 99.9 per cent of the whole product; 55.7 per cent of the entire dust was less than 200-mesh. The dust is white; from 90 to 95 per cent is gypsum and 5 per cent is calcite, as determined by microscopic examination. This dust is distributed by machine.

V-trough barriers loaded with rock dust are installed in every part of entries as well as on all haulageways. The dump at the bottom of the main shaft is washed down every night to avoid accumulations of coal dust, and the tipple is also periodically cleaned for the same reason.

It has been said already that the company officials are fearful that a derailment may cause concurrently a coal-dust cloud and an arc from the trolley line. The fear of the possibility of this unhappy combination has made

them lay stress on good tracks, altogether apart from their value in expediting haulage and in lowering its cost. In order to reduce derailments and accidents to a minimum, the tracks are kept in good condition, and all frogs and turnouts are of standard construction. On the main haulage road, 40-lb. rails are used and the turnouts are of 60-ft. radius. The latter are provided with steel frogs. On cross entries 30-lb. rails are laid, and all turnouts are of 27-ft. radius.

Fig. 1—Test to Prove Navajo No. 5 Dust Explosive

A blownout shot of 1½ lb. of black powder was fired into dust from the mine tipple. This was placed in a rough board gallery, 100 ft. long. The result of the shot, a spectacular explosion, is shown in the illustration. This was conclusive evidence that the dust at Navajo No. 5 mine was fraught with great danger as are bituminous coal dusts the country over.

In the rooms it is necessary to timber within 2 or 3 ft. of the working face. An effort is made to have the timbering done systematically, the sets being placed at an average distance of 3 ft. and the legs being set 18 in. clear of the rail.

The miners drill their own shotholes, but the company provides shotfirers to shoot the coal. At present four shotfirers are employed. At one time, it was customary to require them not only to load and fire the shots, but to examine the places also, but after one of these men had been killed and buried beneath fallen coal, it was arranged to send a fireboss with the shotfirer. So at 4:30 p.m. when the day shift is completed, four firebosses and four shotfirers go into the mine together and in pairs. The shotfirer carries the connecting wires and batteries and the fireboss the fuses.

The powder which is of permissible type is carried into the mine by the miners in fiber containers. They receive it at a magazine that has practically no excess supply. After the miners have received their daily ration, the magazine is almost empty and consequently no menace to safety. At night they bring their fiber containers to the magazine, and in the morning, when they come to the window, they receive them filled.

The main magazine is located in a "draw," or shallow ravine, about 1½ miles distant from the mine. The caps are kept in a separate storehouse. At 9 p.m. four firebosses go into the mine to examine the working places and do not leave till 5 a.m. It is not necessary for fire hunters to follow up the shotfirers, as fires do not result from the shots. This is as might be expected, permissible powder being used and gas not being present.

The shotfirers are instructed not to fire any improperly prepared shots and not to use more than 1½ lb. of powder per shot. Adobe is used for tamping, the stemming being forced into place with a wooden bar.

At every parting two 2½-gal. Foamite Firefoam extinguishers are located, and each locomotive is equipped with a one-quart carbon-tetrachloride extinguisher. Four 2½-gal. extinguishers are located at the dumping station. A 3-in. water line parallels almost the entire length of the main-haulage entries with taps for hose connection every 200 ft.

All power used inside the mine is carried down the air compartment of the air-and-material shaft, at 2,300 volts, through three-conductor armored submarine cables which extend to substations located just inside the mine. The transformer substation, which reduces the working pressure to 220 and 440 volts to be used on hoists, pumps, and lights, is located just off the main aircourse and on the return air. It is placed in a concrete fireproof compartment.

These transformers originally were located in the main aircourse thus affording excellent ventilation, but the management realizing that if the transformers should catch fire they might fill the mine with smoke, the substation has been moved over to the return air, so that any smoke that might originate from such a fire would escape up the air shaft without going through the workings. The shaft is concreted from top to bottom and is provided with steel headworks. It is therefore fireproof.

All secondary feeders from this substation are carried in three-conductor cables which are steel-armored and built for a working pressure of 3,000 volts. These circuits are protected by oil circuit breakers.

The trolley feeder substation is located on the main aircourse and consists of two 200-kw. synchronous motor-generator sets. These are fed at a pressure of

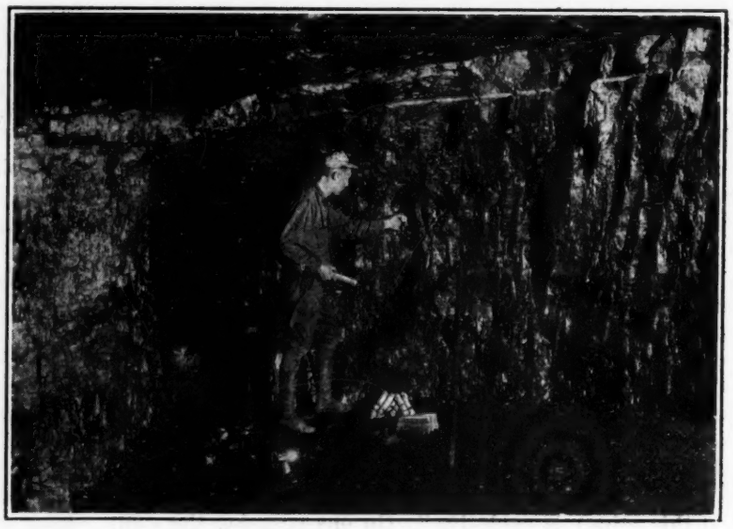


Fig. 2—Shotfirer Placing Shot in Solid Coal

Because the coal bursts and falls down on the cutter the digging of a deep cut in this seam is fraught with danger. The coal is therefore shot off the solid. The place shown is driven on the butt, a direction in which it is difficult to work the coal. In the illustration the seam appears like an intrusive rock, no bedding planes, except at the streak near the roof, being readily visible. Even this streak breaks easily with the coal. The bedding, however, can be seen though it is a fracture plane far inferior to the cleat. This was taken when carbide lights were still in use.

2,300 volts on an individual circuit of 3-phase, 60-cycle alternating current coming directly from the power plant. The direct current thus generated is used for the locomotive haulage system and for battery charging. The sets are equipped with automatic reclosing switches so that in case of an overload or a short circuit on the trolley line or feeders, the switch will fly out. If the overload is only temporary, the switch will reclose after a predetermined time limit, but if it is a short circuit, it will stay out. This equipment is desirable, as thereby the electric arc caused by a broken trolley wire is reduced to a minimum.

Trolley wire is often strung carelessly, but at Navajo No. 5 its safe stringing is regarded as one of the important factors in the promotion of safety. It is protected with wood guards at all points where it is not more than 6 ft. 6 in. above the top of the rails, and no expense has been spared in installing it in a secure and rigid manner.

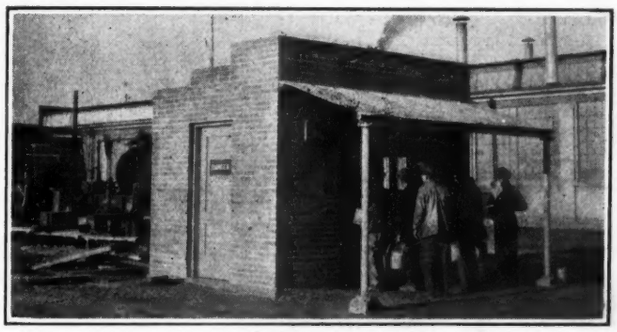


Fig. 3—Getting Day's Supply of Permissible

This magazine which has had to be placed near the mine is not used for long storage but only for day-to-day needs. When the men go to work they get their day's quota and after all are supplied the magazine is practically empty. At night they return and receive credit for the unneeded supplies.

All turnouts from the main trolley wire are equipped with automatic section insulators, so that the section of trolley in a turnout will always be dead except when a locomotive is working beyond the insulator. When feeders tap on, they are carried through line section switches mounted in wooden boxes and fastened to the rib. At these points a blue signal light is placed on the trolley side of the feeder switch. This not only indicates whether the trolley is alive but also marks the location of the feeder.

Trips are handled on the block-signal system. This is manually operated and controlled by red and white lights. Trains are dispatched mostly by telephone, one being located at each parting.

As is customary at all coal mines, the miners supply their own tools, but on leaving the mine they deposit their picks, duly checked, in a depot at the foot of the shaft. The company brings them to the surface, sharpens them and returns them to the depot, where the men get them on going to work in the morning. This provision is afforded for the purpose of preventing accidents on the cage and in carrying the tools to the shop. When leaving the cage the men often were in a great hurry to deposit their picks in the blacksmith shop, and they occasionally fell and received injuries. Consequently, the company believes it best to take care of the picks for them.

As stated in the previous article, p. 638, Nov. 4, 1926, the company supplies all the men with electric safety lamps though the mine is not gassy. Each man pays $1.50 per month for the use of one of these lamps on the basis of a normal run, but the charge is reduced in proportion when the mine works short time. For further protection against dust ignition, no rail joints are welded underground, the bonds used being of the compressed-terminal type. In order to avoid flame in the mine, molten metal is not used for the resocketing of wire rope. Instead, a wedged socket is used, made by a steam-shovel company. It gives excellent service.

It was found that every one had a different way of wedging his car on the steep grades at the working face, and some of the methods were not safe and effective. In consequence, a clamp is used having two wedges that attach it securely to the track.

Each man receives a check which he takes into the mine with him. When he returns from his day's work, he deposits this check at the cabin, and it is hung on a nail over a card on which is recorded his name, his place of work and the location of his home. When the day's work is over, if any checks are not on the board, search is made for the man. The bosses do not go home till they know that all the men have left the mine.

One underground superintendent has charge of the entire workings, which are divided into five sections with a pit boss for each. The mine has a master mechanic and a chief electrician who has control of all electrical equipment, inside and out. The top works are in charge of a surface foreman. A safety engineer takes care of the mine-rescue and first-aid equipment, samples the dust of the mine, tests the air and also reports on general safety.

Twelve sets of 2-hr. breathing apparatus, six of approved and six of older type, are housed in glassed-in, metal-lined wall cases. Six sets of ½-hr. apparatus are also kept at the station. Here, likewise are kept, an inhalator, pulmotors, a power-driven oxygen pump, oxygen cylinders, regenerating material, life-line reel and other equipment for rescue and fire-fighting work.

Careful records of accidents are kept resembling those at metal mines. The annual report of accidents for 1925 shows that the number of shifts worked per

Fig. 4—Kiwanis Club of Gallup Dines in Mine

The long motor barn furnished a novel place for entertainment and being in intake air was free of mine odor.

accident was 428.96 and the number of tons produced per accident, 1,198.83. Two of the 369 accidents were fatal. The causes of the various mishaps were as shown in Table I.

It will be seen that 39 accidents or 11 per cent of the total number sustained were caused by bursting coal. The nature of this hazard was described in a previous

Table I—Causes of Accident, Navajo No. 5 Mine, 1925

Causes	Number	Per Cent
Falls of rock, coal, bone and timbers	156	42
Haulage (pit cars, trips, motors, etc.)	33	9
Liquid from lamp batteries	3	1
Tools	46	12
Bursting coal	39	11
Lifting	12	3
Sprags and spragging	15	4
Blasting	3	1
Stumbling and falls	18	5
Mules	6	2
Handling props (loading and unloading)	14	3
Machinery	7	2
Miscellaneous	17	5
Total	369	100

article, see *Coal Age*, issue of Nov. 4, 1926, pp. 637-640. In view of the unusual roof hazard, it is interesting to divide up the first item on the list as in Table II.

Fig. 5—Part of Office Being Moved from Heaton

In the headpiece is shown this same building comfortably relocated in Gamerco. Good roads and heavy trucks made the movement of this office as well as that of 96 houses relatively easy.

No less than 75 of these accidents resulted in no real disability, the men being back to work the next day. Time lost from accidents was as in Table III.

The accidents from bursting coal resulted in 24 eye injuries, 2 bruised legs and single injuries to many other parts of the body. The bursting coal, however, was not the cause of all injuries to the eyes; there were 20 from other causes, including fall of rock, 11; cutting wedge, 3; breaking rock, 2; sawing, striking rock, coal dust and electric arc, one each.

Every month the general superintendent, Thomas Moses, has a form prepared, showing the accidents during the previous month. Table IV shows such a report with the names of the various pit and surface bosses changed, however, so as to prevent identification. This report is carefully considered at a meeting of the foremen's safety committee called for that purpose. Each boss knows how he is measuring up with the others and is stimulated thereby to improve his record.

An employees' safety committee also has been provided. This is composed of about twenty-five employees and consists of miners, trackmen, outside men and others with the mine safety engineer as chairman. This committee meets once a month, when any suggestions or recommendations which the members may have to make are discussed and later brought to the attention of the company officials.

Once each month a joint meeting of the two committees is held with a dinner and some form of entertainment. At these meetings the men and their bosses come into personal contact and discuss freely accidents and their prevention. The results have been extremely advantageous in promoting safety and friendly relations. A further precaution taken is to have outside engineers, preferably those from the U. S. Bureau of Mines, make periodic inspections and recommendations, which have hitherto been so valuable that they have been invariably complied with.

The mine at one time produced 3,400 tons a day, and it could today produce more than 4,000 tons daily if it had sufficient men. It was actually producing, however, in September of this year only about 2,000 tons daily, because of the short force, the reason for which is of interest. When the demand for coal decreased, D. C. Jackling, the president, a metal-mining engineer, could not see why coal mines should not be run like metal mines. The practice at the latter is to have no more men than are needed to produce the tonnage when a steady run is provided.

The coal mines of the United States have in almost all instances been operated with the intention of obtaining as much coal as possible every working day and have restricted their working days to meet the needs of the market. In this way their managements have kept a force of men ready for any increase in demand and have had tenants for their houses. However, as a result of this practice, they have had to keep a large staff of daymen because the large area kept open had to be inspected and operated. There are distinct disadvantages in both plans, but the practice at the Gallup American mine, if general in the coal industry, would prevent the coal mines from having, as at present, a surplus of men, many of whom receive inadequate yearly wages. Navajo No. 5 works nearly every day even in times of inactive market, and this fact makes the mine popular with those who appreciate steady work and the large wages that go with it.

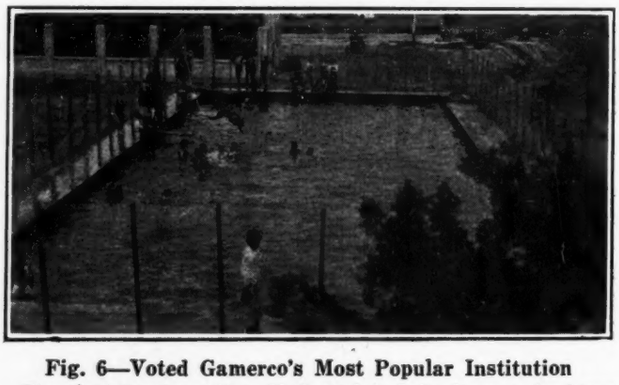


Fig. 6—Voted Gamerco's Most Popular Institution

The pond measures 35 x 70 ft. and is 7 ft. deep at the lower end. A wire fence prevents the boys from running beyond the pool and the walk by which it is surrounded.

Table II—Accidents from Falls of Roof, Coal, Bone and Timbers, 1925

Falls of	Accidents	Per Cent of All Accidents
Rock	127	34.4
Coal	17	4.6
Rock and coal	1	0.3
Bone	1	0.3
Timber	10	2.6
Total	156	42.2

Table III—Length of Disabilities from Accident, 1925

Length of Disability	Accidents	Per Cent
None	75	20
1 to 10 days	169	46
11 to 30 days	79	21
Over 30 days	44	12
Fatal	2	1
Total	369	100

In order to keep in close touch with the standing of the company financially, the manager at 3 p.m. each day gets a record of the cost of producing coal the day before and the cost per ton per month to date, taking into consideration all idle days. He also has a record of the selling cost of the coal which is readily obtainable

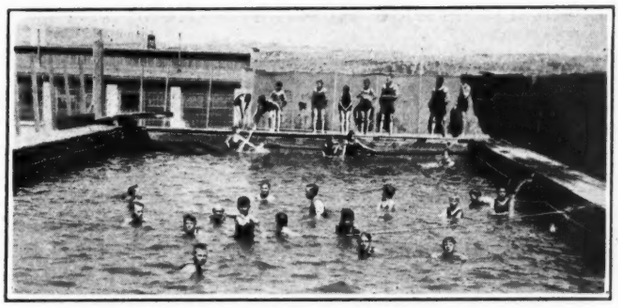


Fig. 7—Close-Up View of Swimming Pool

The boys monopolize the pool in the mornings. In the afternoon the women and girls have the use of it as an exclusive privilege, and in the evening the men disport themselves in its waters.

because, though the general sales manager is located at Albuquerque, an assistant sales manager is stationed in the mine office.

The Gallup American Coal Co. used to have mines known as Navajo Nos. 1 and 2, Heaton and Weaver. The mining towns for these mines were badly scattered and rather than move these houses the company has provided a closed motor-bus service from the various villages to the mine. However, 96 houses have been transported bodily to Gamerco from their former sites. Accompanying illustrations show these houses in course of transportation. Twelve of the cottages have been gunited exteriorly and provided with inside toilets and baths. Almost every house has a garage and a fenced yard.

The older children are taken by one of the buses to the Gallup high school daily, thus providing them with a good intermediate education, such as mine villages can rarely afford. As there is a large change house with thirty showers and overhead hangers for clothes, of which 80 per cent of the men avail themselves, little dirt and malodor goes to the homes.

Table IV—Record Presented to Foremen's Safety Committee

Accidents During August, 1926

	Number of Accidents	Duration of Disability, Days		
Thompson, pit boss				
Fall of rock	..	45	Tons produced	16,832
Fall of rock	..	15	Tons per accident	2,405
Fall of rock	..	19	Shifts per accident	432
Fall of rock	..	45		
Spragging	..	11		
Cut with axe	..	12		
Struck by tie	..	11		
Total	7	158		
Jacobson, pit boss				
Fall of rock	..	7	Tons produced	6,332
Fall of rock	..	84	Tons per accident	2,111
Loading car	..	2	Shifts per accident	494
Total	3	93		
Smith, pit boss				
Blocking car	..	26	Tons produced	5,740
			Tons per accident	5,740
Total	1	26	Shifts per accident	1,463
Arthur, pit boss				
Fall of rock	..	19	Tons produced	5,847
Bursting coal	..	13	Tons per accident	2,924
			Shifts per accident	865
Total	2	32		
Straight boss				
Fall of rock	..	3	Shifts per accident	285
Total	1	3		
Roberts, driver boss				
Spragging	..	33	Shifts per accident	380
Total	1	33		
Stanton, outside boss				
Struck by rope	..	27	Shifts per accident	875
Struck by gate	..	4		
Total	2	31		
	17			
Recapitulation				
17 accidents entailing a loss of		376 days		
Tons produced per accident		2,221		
Shifts worked per accident		595		

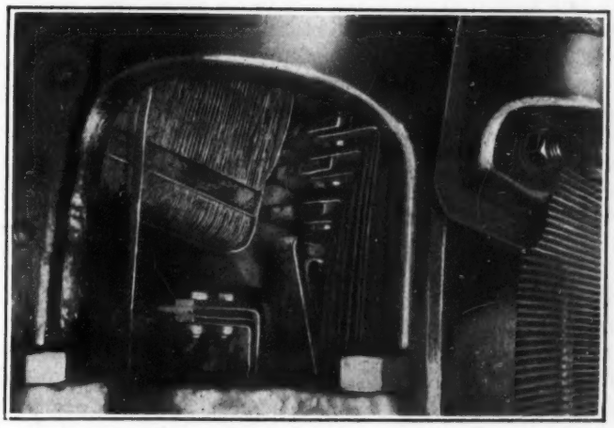
Damaged Insulation Was Not Repaired

No one will argue that sand-blasting the winding of a direct-current motor and at the same time "guniting" it with a thin coating is good practice. But this is practically the treatment undergone some time ago by the two 2,000-hp. direct-current motors which drive the main hoist at the New Orient mine at West Frankfort, Ill.

The illustration shows the remaining and readily noticeable effects on the field windings of the cyclone that struck the New Orient mine in the spring of 1925. The walls of the hoisthouse withstood the wind but many of the heavy slabs of concrete roofing were carried away and the windows were destroyed.

Particles of sand and other fine material carried by the wind during those few minutes bared the copper of insulation at many points on the corners of the shunt fields. All small crevices were filled with a wet mixture of dirt and sand, which after drying had the appearance of concrete. In the illustration the light-colored spots on the field are the deposit which remained after a thorough cleaning had been given the hoisting equipment.

At first thought it is rather surprising to see such large and important motors operating with bare copper showing on the corners of the shunt-field coils. The insulation between adjacent outside wires is not injured, however; in fact it probably is reinforced by the fine material driven in by the wind. Inasmuch as the voltage between turns is extremely low there is no necessity for going to the expense of reinsulating the small bare spots on the outside turns.



Looking at Shunt Field Through Brush-Holder Yoke

The fiercely swirling sand-laden air currents inside of the hoist house drove into every crevice a deposit that has the appearance of concrete. The spots or streaks on the shunt field is that part of the deposit which has successfully resisted cleaning. Were this a color photograph, streaks of bare copper could be distinguished on the corner of the field coil.

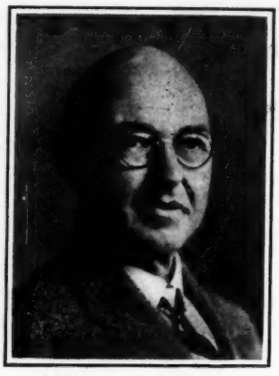
Thermodizing Coal Gives Smokeless Product*

New Process Is Catalytic Between Practice and Progress—Revolution Is Due in Orthodox Ideas—Two-Stage Treatment Developed—Resulting Fuel Contains 12 per Cent of Volatile but Otherwise Resembles Coke

By Clarence B. Wisner
The Carbocite Co., Canton, Ohio

DEVELOPMENT of a process is a reaction between an idea, dynamic energy, time and much money moving against strong resistance. Patience is of the utmost importance to guard against bringing out an underdone product or an overtuned mechanism.

Difficulties in producing coke at low temperatures have been so baffling and the money spent on some processes so great, without convincing issue, that the public is now skeptical as to whether there is any such thing as low-temperature carbonization.



Clarence B. Wisner

But what is a commercial process? One definition is: (1) Take high-ash slack and clean it with air, reducing the ash to that of the coal in place; (2) solid fuel must not carry more than 13 per cent of ash or 12 per cent of volatile; (3) tar recovered must pay processing cost and cover loss of heat units in solid fuel, by reason of the hydrocarbons withdrawn; (4) solid-fuel revenue must pay for the raw coal and leave sufficient surplus to attract capital. The fuel itself must be of suitable form, strength and density to command popular domestic trade, and, finally, it must be produced at a price to compete with domestic-sized bituminous coal after market saturation in competition with anthracite.

Capacity, because of the low thermal conductivity of coal, must be developed by rapid heating in a constantly flowing stream at the highest possible velocity between the heating medium and the coal. Given these conditions, the time cycle from critical vapor eduction point to tar end point may be 40 minutes. This rapid pyrolysis may only be accomplished in the rotary retort, if full values of products are to be conserved.

As a result of our six years of intensive work, we are now able to offer with confidence a new, if radical, principle to the art of low-temperature carbonization, of technical and practical interest to the coal world. It is a dual or two-step process, in which an oxidizal thermal pretreatment known as thermodizing brings new conditions under which the solid fuel made in the retort is of as great weight and density as byproduct coke made from the same coal. This, of course, is directly opposed to present theory and practice. At present rotary processes are generally briquetting their residual char for domestic fuel.

Thermodizing means all that the title conveys and is the logical catalytic agent between practice and process. It is not based upon an unbaked theory, for every condition set forth in this paper has been convincingly proven in practice, and this process is about to be put into commercial use. If it sustains expectations derived from large-scale experimental operations a revolution must take place in orthodox ideas of carbonization practice.

Dual or two-stage processes had their inception in two original sources, each, however, from an entirely different angle:

Parr and Layng, at the University of Illinois, working on the theory that if coal be preheated to approximately the critical vapor eduction point away from air, and then charged into a vertical retort with wall temperature held at 750 deg. C., wherein the charge remains quiescent, carbonization may be completed autogenecusly, assisted by the exothermic heat generated within the coal during pyrolysis. (*Coal Carbonization*, Porter, page 380.)

The Carbocite Co.'s plant at Canton, Ohio, operates a continuous process. (For more complete description, see *Combustion* for June.) In a continuous process one may discharge and examine both gaseous and solid products at any stage and temperature. Although it was possible to co-ordinate practice on different types of coal, in many instances it was done at the sacrifice of textbook and theory, and the practice finally developed is expected to have a strong influence on theories of the future. The process comprises two steps:

1. THERMODIZING—Heating the raw coal up to near the vapor eduction point in an oxidizing atmosphere until its swelling and agglutinizing quality is tempered to the extent desired, and then:

2. CARBONIZING—Confining the pretreated coal in a closed container and flooding it with extraneous heat to maintain it at hydrocarbon vaporizing temperature.

The rotary type of retort was accepted after due consideration of the difficulties experienced. These troubles were not considered insurmountable. Only one will be referred to here, the sticking of the coal to the walls of the retort, which is not inherent in the coal itself but in the manner in which it is treated.

The maximum operating temperature in the steel

Experiments in the manufacture of smokeless fuel from bituminous coal have done much to upset previously existing theory. It was long believed that coal undergoing low-temperature carbonization should not be subjected to the action of an oxidizing agent. Experience in thermodizing would indicate that an oxidizing agent is rather beneficial than otherwise.

*Abstract of a paper entitled "The Missing Link in Low-Temperature Carbonization," presented before the International Conference on Bituminous Coal, at Pittsburgh, Pa.

walls of the retort must not exceed 500 deg. C.; if tar is dropped on the walls at a higher heat the light oils boil off, leaving behind a coke residue securely glued to the steel. This also applies to the vapors given off; cracking takes place and amorphous carbon is left behind. The trick is so to manipulate the mechanism operating at this low temperature as to get a high heat transfer through the steel.

This is accomplished by direct regeneration, that is, for each pound of charge 2 to 2½ lb. of heating gas is circulated around the retort at high velocity, drawing back the spent gas at some 500 deg. F. to the combustion furnace where 25 per cent of new gas at combustion temperature is introduced and a like amount discarded to the stack. The fresh high-temperature gas maintains the desired constant heat with continuous consumption of a minimum quantity of fuel.

The maximum load in either retort is 12 lb. per square foot of peripheral surface and fills one-sixth of the cubic space. This light load makes rapid heating practical, and as high temperatures are avoided, a large volume of hot gas at high velocity must be employed. The process is purely mechanical so long as time, temperature and air constants are recognized and respected. The retort is operated with unskilled labor in a foolproof manner.

In order to attain capacity in a commercial carbonizing plant, because of the low heat conductivity of coal it is necessary to bring the heating element or fluid into direct contact with the coal. This may be advantageously accomplished by passing hot gas through a rotary kiln. Under this treatment the coal, which enters in a finely crushed state, agglomerates and leaves the kiln in the form of "coal balls."

I will mention one more difficulty in the use of the rotary retort in which coal blending is not a satisfactory answer, viz.: the rolling up of the softened coal into balls too big to pass a gas-tight discharger. The larger the ball the higher the heat required to reduce the volatile; in fact, it has been found impossible at maximum temperature to reduce volatile in balls 6 in. in diameter or larger more than 16 to 20 per cent.

Coal balls is believed to be an appropriate name for the solid fuel. It is a product with an exclusive individuality, smooth, irregularly round, of varied shapes and sizes, distinctly differentiated from uniform artificial briquets. It is the exclusive product of thermodizing. To make coal balls, the raw coal is first thermodized—that is, heated and held in an oxidizing atmosphere the necessary time to produce the size of balls desired, at a temperature of 250 to 275 deg. C. In this step two-thirds of the entire processing heat is driven into the coal, and the hot dry material is in ideal condition for completion into coal balls as it flows into the carbonizer. The size is restricted to pass a 3-in. ring and the fines are screened out on a ¼-in. screen; 10 to 15 per cent of fine dust is eroded from the fuel in tumbling through the retort. This may be burned as powdered fuel or fed back into the raw coal.

It is becoming popular with domestic coke users to buy with each ton of coke 500 lb. of breeze, using it to fill the voids and bank the fire at night, giving more uniform combustion. Coal balls when they fracture from dropping do not crumble, but break into a few pieces. This breakage never makes much breeze.

Coal balls are made after a carefully worked out method: At the close of the intumescent period, when all of the tar vapors have been driven off and expansion has ceased, the discharge of product is stopped, because at this point coal balls are of maximum weight and density. If carried to a higher temperature, contraction and cracking begin. This critical temperature varies with the type of coal from 400 to 480 deg. C.

Domestic fuel stands first in the demands on low-temperature carbonization, and that is why heating is stopped at total tar eduction. By stopping here without waiting to get all the gas that would be driven off at the maximum temperature, about one-half of the time cycle is saved and the output increased accordingly, which compensates for the gas left in coal balls. Because of the perishable nature of the gas, it must be disposed of every hour in the year, offering a serious difficulty; but in suitably located plants this can readily be done.

Twenty-eight to 32 gallons of tar oils are produced per ton of raw coal. It has been stated that the value of this product is problematical. To this I cannot agree. Tar of this kind cracked in an ordinary continuous petroleum refining process at 100 lb. pressure gave: (1) Twenty-two per cent water-white motor fuel, 50 per cent aromatic, appraised by competent authority as having a value half way between straight gasoline and pure benzol; it is a no-knock fuel of the highest order, miscible with lower grade fuels, increasing power and decreasing carbon deposits. (2) Thirteen per cent clean tar acids. (3) Fifty-five per cent no-ash coke.

The cracking process may be profitably installed at any plant with a tar output of 1,000 bbl. or over per day. Tar refiners see value in this product above its fuel value and offer long-time contracts for production.

SOME COALS PROVED DIFFICULT

When my associates and myself first undertook to thermodize Pittsburgh No. 8 coal it looked as if we had reached our Waterloo. The effect of air was negligible when we crushed all through a ¾-in. mesh. Reducing the size so that all would pass through a ⅜-in. screen partly restricted agglutinizing, but we were not able to completely kill it on this size. The first balls were made so large that tumbling in the retort sounded like a foundry rattler. Finally, however, we reduced the size.

Moving over the Ohio State line, the No. 6 bed predominates. This is a highly volatile, high-oxygen and violently swellng coal. Carbonized direct, the solid fuel was of the consistency of popcorn and weighed 17 to 19 lb. per cubic foot; adding as much as 30 per cent of coking coal gave about 50 per cent of weak unmarketable balls. A little air in thermodizing killed any coking tendency, and we finally found the solution in a blend of 85 per cent of No. 6 with 15 per cent of No. 8, but not without the air pretreatment. We then produced 85 per cent coal balls weighing 27 lb. to the cubic foot, meeting our specification in every particular.

Three types of Indiana coals have been processed without blending and a fourth which required slight blending. In each instance the coal balls weighed 27 lb., which is the same weight as byproduct coke of equal

size made from the same coal in the ovens at Terre Haute.

Having processed these various coals, it is believed that domestic coal balls may be commercially made in practically all of the mining districts throughout the country. The superiority of these natural coal balls containing a uniform gas content which burns with a pleasing flame until entirely consumed—without smoke or odor—will be appreciated. Briquets are prohibitively expensive in competition with the cost of these coal balls. These features have caused producers to offer raw coal for a plant now building in exchange for coal balls at a satisfactory spread in price to meet the financial side of the specification.

Parr and Layng call for the total exclusion of air in their preheating, positive that any oxidizing influence would be fatal to their process and depending alone on blending to overcome swelling and to obtain proper weight and density in the solid fuel.

My associates and I are just as positive that present theory and practice inherited from byproduct coking are wrong and not applicable to low-temperature carbonization. Twenty-five years of research and experimentation have not advanced the art into commercial low-cost production. We believe that the solution of the problem is at hand, and offer thermodizing as the liaison between process and practice. Paradoxical as it may seem, high-oxygen coals require an oxygen bath to increase weight and density, in which oxygen may be extracted and not absorbed as is evidenced by the weight of the coal balls. Until we know the reason why, it certainly looks as if some legerdemain takes place when we see fine coal tumbled loosely through a rotary retort and discharged in coal balls of the same weight as byproduct coke made from the same raw material. But these seemingly radical statements are based on convincing demonstrations, which indicate that low-temperature practice must be entirely divorced from high-temperature theories. We do not deny that we are earnest students of theory and practice of the world's greatest fuel problem, but we are indifferent as long as we can save 90 per cent or more of the heat units contained in the raw coal and produce the highest quality of products.

Beware of Portable Electric Lights When Used in Boilers

When working around low-voltage circuits, such as used for lighting and small-power purposes, men are inclined to underestimate the hazard of such circuits under certain conditions. In dry places and with dry hands, according to *Power*, one may touch a 110-volt circuit with the finger tips without getting sufficient shock to know if the circuit is alive. This is just where the danger begins, for immunity to an unpleasant shock under dry conditions is likely to lead to carelessness where it is wet and where a serious hazard to life may exist.

One of the most dangerous places where electric lamps are used, is inside a boiler. In these confined quarters the workman usually is perspiring, his clothes are wet and generally saturated with iron rust and other conducting materials, and his hands are in the same condition. A considerable area of his clothing is in intimate contact with the boiler, and may be part of his body. The boiler is thoroughly grounded through the piping to the water system and by other means. It is therefore difficult to imagine conditions more favorable for obtaining an electric shock if a circuit is present. Another feature that adds to the danger is that if the workman comes in contact with an electric circuit in a boiler, he is generally in a position where it is difficult to get clear of the circuit and, if not shocked to death suddenly, is killed by a slow process because he is unable to extricate himself.

The number of deaths caused by electric light currents inside of boilers shows the necessity of using every precaution to prevent coming in contact with a live circuit when working inside such equipment. What is true regarding working inside a boiler is true of working in any confined quarters where it would be difficult to get away in case of contact with a live circuit. Those who have studied these problems know that the greatest number of accidents to workmen occur with circuits of from 110 to 550 volts. Many of these accidents are due primarily to lack of proper precautions.

In working with an extension lamp in a boiler, there are three ways in which a shock may be obtained: By the strands of the conductors breaking and working out through the insulation, by defective insulation, and by coming in contact with the lamp's base or socket. If extension cord, heavily insulated with rubber, is used and the lamp socket is well insulated with rubber and friction tape, there is no danger. The solution to the problem is so simple that one wonders why so many fatal accidents have occurred. A portable lamp that may be safe to use outside of a boiler or in an unconfined space may be a serious hazard when used in such locations, therefore take no chances with such equipment and be sure that the insulation is up to high standards.

Hood Asserts Term, "Smokeless Coal," Is Challenge to Engineer

The term "smokeless coal" is a challenge to the combustion engineer, O. P. Hood, chief mechanical engineer of the Bureau of Mines, declared at the recent conference on bituminous coal at Pittsburgh, Pa. None of his art is needed to make anthracite and coke burn smokelessly, but as increasing amounts of volatile matter are associated in the fuel, more and more demands are made upon his skill in furnace design, in adaptation to service, and to care in operation to keep within absolute or even practical smokeless limits. Illustrations can be found of smokeless performance of every fuel, so that the statement can be made "that it can be done." That it is not done simply indicates that it is not wanted badly enough.

Most engineering is a compromise among conflicting requirements. Smokeless operation usually requires the co-operation of several interests, sometimes management of a high order, and often a degree of care and attention difficult to buy. Financial and operating limitations are many. All of these elements enter into the practicability of attaining smokeless operation, and obviously each case must be considered by itself.

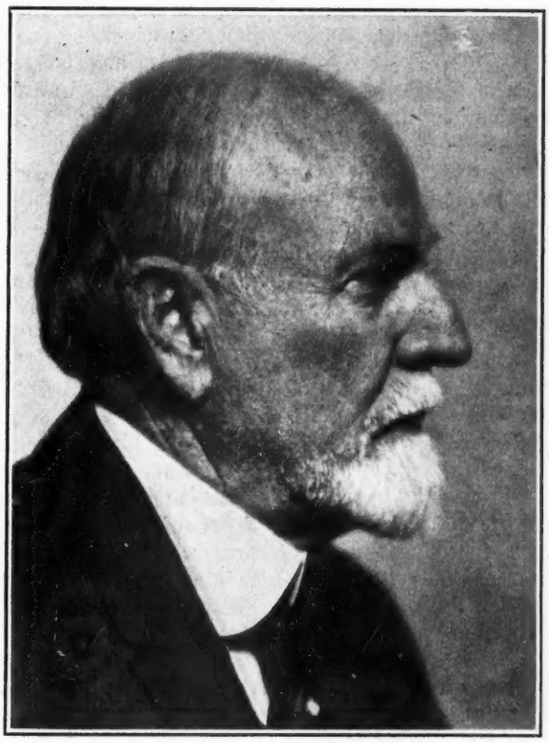
IT IS CLAIMED by the Rochester Gas & Electric Corporation that, as a result of successful experiments in its own heating plants last winter, it has developed means of burning gas tar. This liquid burns with a smokeless flame, and is said to be eminently satisfactory.

Legion of Admirers Honor James H. McGraw At Birthday Dinner

NEARLY FORTY-TWO YEARS ago a young school teacher from Genesee County journeyed down to New York City to try his hand at industrial journalism. Country school teachers—even the most brilliant—never have been set apart as the possessors of great wealth and the young man from Genesee County was no exception. But he brought to his new work an unbounded faith in himself, faith in the future of the business and engineering press and a vision of the future of American industry.

Last Friday evening 1,000 industrial leaders, engineers, publishers and editors gathered in the grand ball room of the Hotel Astor, New York, to celebrate the sixty-sixth birthday of the former schoolmaster of Corfu. Thomas Edison was honorary chairman of the committee in charge. Judge Gary, Secretary of Commerce Hoover and Secretary of War Davis were among the 2,000 whose felicitations will make up a bound volume to be presented to the guest of honor—James H. McGraw.

The president of the American Electric Railway Association, Willits H. Sawyer, came from St. Louis to tell how the counsel and leadership of the young man who migrated from Genesee County to the big city in 1885 had helped the street railways over the rough road of competition. Largely through Mr. McGraw's agency the bus had been turned from a destructive to a constructive factor in interurban transportation. Modernization, too, had had his vigorous backing.



James H. McGraw

General Guy E. Tripp, chairman of the board of the Westinghouse Electric & Manufacturing Co., recounted the esteem in which Mr. McGraw is held by the men who make the equipment back of this age of steam and electricity. "A sane idealist, Mr. McGraw had demonstrated, said General Tripp, that "idealism is not out of place in a successful business. The kind of idealism I mean has been one of the foundation stones upon which he has built his great institutions. It is a valuable asset and we business men often overlook that fact."

Dexter S. Kimball, dean of Sibley College, Cornell University, speaking on behalf of the engineering profession, declared that the greatest guaranty of the permanency of present civilization is the printed record we are making of the experiences and processes of applied sciences. In that this civilization differs from its predecessors. And Mr. McGraw, he said, was an integral part of the picture because publication of these records was the work of McGraw-Hill companies.

Business publications, remarked Charles L. Edgar, president of the Edison Illuminating Co. of Boston, might be classed as good, bad and indifferent. The McGraw-Hill papers, it was his conviction, fell into the first class. Constructive, forward-looking, they had rendered a real service to the electrical industry, and central-station interests were glad to be able to express publicly their appreciation of this service and the leadership exercised by Mr. McGraw.

Finally one of his own associates in business, E. J. Mehren, vice-president of the McGraw-Hill Publishing Co., told his fellow guests what manner of man the former schoolmaster was and the ideals which animated his enterprises. Mr. McGraw, declared the speaker, insists upon "the production of a very superior product" and brings to that task "the qualities of an ardent spirit of service, of faith, vision, courage and perseverance."

Lincoln, whom Mr. McGraw greatly admires, visioned the strength of a reunited nation. Mr. McGraw, continued Mr. Mehren, "visions an engineering and an industry of the future more complex, more efficient, more beneficent to the body politic than the engineering and industry of the past. Standing on the pinnacle of forty years of service to engineering and industry, he tells us that we have but built the foundation and charges us to prepare with adequate and competent personnel for the greater responsibilities, the greater exactions of the new day."

Responding to these tributes, Mr. McGraw declared that the accomplishments praised would have been impossible without the whole-hearted co-operation of the industries served by the McGraw-Hill publications and the workers of the McGraw-Hill organization. It had been the aim of the McGraw-Hill publications, he said, to give the reader full measure; to speak fearlessly, but without rancor, and always constructively.

John W. Lieb, vice-president of the New York Edison Co., was toastmaster. Arthur Williams, of the same company, was chairman of the dinner committee. His associates included John Hays Hammond, Herbert Hoover, Rembrandt Peale, S. D. Warriner, George Otis Smith, Gerard Swope and Owen D. Young.

Oxyacetylene Cutting and Welding Equipment Soon Pays for Itself at the Mine

Autogenous Welding Common at Mine Plants Today—Arc Welders Useful But Lack Universal Applicability—Many Good Makes of Oxyacetylene Equipment Available—Can Be Used in Cutting, Construction and Repair

By J. F. Eldee
Clearfield, Pa.

PRACTICALLY all coal mining companies today do their own maintenance and repair work and there are not a few that construct more or less of their own equipment. For this purpose some maintain elaborately equipped machine shops while others are not so well off.

A look, however, at the scrap pile of almost any concern of this kind shows that a tremendous annual loss is being sustained through the scrapping of worn or broken machine parts that are discarded long before the end of their useful life. Fortunately it is possible to eliminate most, if not all, of this enormous waste by autogenous welding and this is what some of the more progressive companies are now doing.

LARGE PRODUCERS MOST ECONOMICAL

Having spent considerable time in the soft coal fields of Pennsylvania and West Virginia I have noted that less than 10 per cent of the operating companies are taking advantage of this means of saving money. Those who are now using welding equipment are, in most cases, the larger producers and in practically every instance they are much pleased with the results obtained. Certainly it is essential that the small producer operate as economically as possible and a good start on that road can be made by holding upkeep expense to the minimum figure. And there are some big operators who can also profit by this practice.

Nearly all companies using electric locomotives have arc welding equipment and occasionally this outfit finds its way into the shop for this or that job. Unfortunately the possibilities of the arc are almost limited to steel, so that for maintenance of mine equipment something that will meet almost universal application is required. It is here that oxy-acetylene welding and cutting equipment steps in, for with it a true fusion weld can be made on all metals. Furthermore all ferrous metals can be cut and shaped by it with ease and economy.

The investment in oxy-acetylene apparatus in most instances is less than half that necessary for the arc outfit, which in most cases is purchased for the single operation of bonding rails. The possibilities open to acetylene equipment are unlimited. It is not unusual for an outfit of this kind to save its cost on one job and it is something that will be in almost daily use, not just three or four times a year as is the case with the arc equipment.

The use of the oxy-acetylene outfit does not end with the reclamation of worn or broken equipment or parts thereof but finds a vast field of usefulness in the installation, alteration and adjustment of new and existing equipment and machinery. Structural steel for tipples and other buildings may be cut and welded. Guard rails, gates, etc., can be made up of pipe or rods, scrap being used for this purpose. Rails can be quickly cut and holes made as desired. In the electric shop the oxy-acetylene outfit will be found far superior to the blow-torch or soldering iron for soldering, brazing and similar operations.

Mine drainage presents a big field for this equipment as all pipe lines and fittings may be welded. If it becomes necessary to remove such a line it can be cut apart in desired lengths. In a new location the sections can be readily welded together again. Oil and gas companies have learned the economy and superiority of the welded joint for there are hundreds of miles of pipe line as well as many large compressing and pumping stations without a single threaded joint, factory ell or other fitting in them. In some cases where acid water or soil renders the life of wrought iron or steel pipe short, cast iron has been successfully used, the joints being bronze welded.

The above by no means exhausts the field of uses and many other applications will occur to the men as they become more and more familiar with the manipulation of the apparatus. Here let it be said that the idea, that great knowledge and experience is required, should be promptly banished for the equipment is extremely easy to handle and the average mechanic has no trouble in becoming proficient in its use. Also most of the concerns from whom equipment is bought as well as the manufacturers furnishing the gas will be glad to have their salesmen and service representatives give instructions or even assistance on a big job.

GOOD EQUIPMENT IS ENTIRELY SAFE

There are many makes of welding and cutting apparatus on the market today. Some are excellent, some fair, and others hardly worth the metal they are made of. Equipment built in accordance with modern scientific and engineering principles and design is entirely safe and so easy to handle that the novice need not be afraid to light up the torch and try his hand.

Some mining companies have been so unfortunate as to get hold of some of the bad equipment, probably due to lack of knowledge of the market. Their experience has been so disgusting that they are more or less prejudiced against all welding and cutting devices. However, this should not be the case for this prejudice is actually costing these mine operators each year several times the price of a good welding and cutting outfit. If the buyer will look to the following details in the equipment under consideration, he most certainly will not go wrong.

The so-called equal- or balanced-pressure type of torch seems to give greatest satisfaction. This also is the conclusion of the U. S. Bureau of Standards, after exhaustive tests, as reported in its Technical Bulletin 200.

A welding torch with the gas mixer back in the handle gives the most consistent performance under all working conditions.

Welding torches of this design are referred to as the goose-neck style, but all makes of welding torches of this design are not good. There are some that will backfire, pop, and go out upon the slightest provocation. Copper is a highly refractory metal and is probably the best known today for tips. A torch with plenty of copper in the tip and extension, conducts the heat rapidly away from the hot zone and gives the best results.

A One-Piece Tip Is Preferable

In cutting torches of the equal-pressure type the gases are mixed within the tip. Preference should, therefore, be given a torch with a one-piece tip, as such equipment will stand much more hot work. Here again copper is the best metal available for the purpose. A torch in which the tip is threaded into the head and then secured with a locknut gives the most satisfactory performance as it will not leak at the head no matter how hot it may get.

Some torches of the types mentioned are so well constructed that I have, with perfect safety, plunged the tip into a crater of molten metal or have kept the torch going in a hot corner even after the tip had become red hot.

Gas pressure regulators are all pretty much the same and any company making good torches will supply good regulators.

There are several reputable concerns supplying oxygen and acetylene in cylinders and they have branches in all important centers. The salesman who sells the equipment can furnish information as to the nearest and best source from which to procure gases. In most cases the cylinders are loaned free of charge, the user paying only for the gas contained therein.

Some big industrial concerns manufacture their own gases but in the case of oxygen this is not recommended for it can be purchased for little more than the actual cost of manufacture, less than the price at which the user can produce it.

Generated Acetylene Is Advantageous

In the case of acetylene it is often advisable for the user to generate it from carbide as needed. This is much the more economical procedure for even if the consumption amounts to only a cylinder full a month the generator will pay for itself out of the saving in gas cost in a year or less. The saving is actually 2½ to 4c. on each cubic foot of gas used.

Furthermore acetylene from a generator is free from acetone and other impurities. This gives a hotter flame and enables the torch operator to produce sounder and better welds.

There are some excellent generators on the market today and some of them are as readily portable as the large welding-size cylinders of acetylene. They are quite safe under all conditions as well as being easy to care for. The generators are automatic in their operation. In some the carbide is gravity fed while in others the feed is mechanical. The mechanically fed generators give the steadiest performance and the least trouble.

Only the best grade of welding rods and fluxes should be purchased. Supplies bought on a price basis are usually of inferior quality and a few cents saved on rod or flux may cost many dollars in the failure of a weld.

Good grade low-carbon steel rods are copper coated: high-carbon and nickel-steel rods are bare-bright. Cast iron is usually rough as it comes from the molds and a rod that is covered with sand or other foreign matter should be avoided. Bronze is now largely used instead of brass because of its high tensile strength, easy flowing and other properties. Good bronze rod will have the makers name or trade mark stamped somewhere upon it.

Both rods and flux should be stored in dry places and the flux kept tightly covered. Dampness hardens this material and causes rod to rust. It is not desirable to get rust into the weld as it has certain detrimental effects.

In conclusion let it be remembered that oxy-acetylene welding and cutting equipment is something that the mine operator should consider seriously. It will do more to reduce upkeep costs and bring greater returns than any other single piece of maintenance equipment that can be purchased today.

Considerations Determining Future Of Nitrogen Fertilizers

Many discouragements have come to the manufacturers of nitrogen fertilizers, the price of ammonium sulphate being lower than before the war. As the sulphate is a byproduct of modern metallurgical coke, it will continue to be made without regard for the market that is to absorb it. It is characteristic of byproducts that they are sold either at an excessively high or at an unreasonably low figure because the cost of production does not determine the price.

Important considerations were presented by the speakers at the meeting of the fertilizer section of the Bituminous Coal Conference which met in Pittsburgh, Pa., Nov. 17, in the Industries Building of the Carnegie Institute of Technology. These follow:

(1) That the nitrogen obtained as a byproduct in the operation of coke ovens and Mond gas producers, though it is not the principal source of the commercial product, is nevertheless that with the most assured future, being better able to compete in the market than any fixation process conducted for and by itself. It is likely to continue to progress because of the growing demand for coke and water gas.

(2) That many nitrogen-fixation plants had their origin in war needs and were being operated largely as a preparedness measure, this being especially true abroad.

(3) That the sale of fixed nitrogen to agriculture is limited because the product of the farms already exceeds the needs of the world and that the advantages of fertilization by fixed nitrogen or other chemicals or by manures lie largely in the fact that thereby farm labor can be saved and farming activities so intensified that only the best lands from a physical standpoint and from the viewpoint of nearness to market need be used.

(4) That water power rarely has any advantage over steam power in the making of fixed nitrogen by the cyanamid or electrolytic processes, and

(5) That an important consideration in the manufacture of fertilizers is to make them wherever they can be most readily and cheaply distributed—that is, the location of the market must not be overlooked in choosing the point of manufacture.

Fertilizer Demands to Furnish Big Coal Market Before Many Years

Synthetic Ammonia Plants Already Produce Twice as Much Nitrogen as Is Obtained from Coke Ovens and Gas Producers—Fewer Farms Well Fertilized Will Reduce Labor and Increase Earnings of Agriculturist

ONE of the important markets for coal will eventually doubtless be agriculture. The greater part of the fertilizer requirements of the world will be met either from the nitrogen in coal, from electrolytic and synthetic processes operated by current generated from that fuel or, in the case of non-nitrogenous fertilizer ingredients, from the reducing action of furnaces either operated by coal or by current generated by the same means.

But there is one drawback—the farms already produce more than man can consume. Must we wait, then, till consumption once more gets in step with production? That is hardly necessary, for many farms are physically ill-suited for operation either because they are too remote from the railroad or the ultimate consumer or are too hilly and rocky for successful operation. The farmer must introduce intensive methods and needs to heed the injunction, "Fewer and better farms."

EUROPE HAS MANY NITROGEN PLANTS

According to Dr. Louis C. Jones, Nitrogen Engineering Corporation, New York City, speaking before the fertilizer section of the International Bituminous Coal Conference in the Industries Building, Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 17, the growth of nitrogen-fixation plants in Europe has been phenomenal. This, however, is no menace to the coal operator. It may be harmful and doubtless is to the producer of byproduct coke but it brings happy augury to those who produce coal for power purposes. Doctor Jones in his address stated that, after all, the nitrogen obtained from coke ovens and producers is barely one-half that from other sources, being only 300,000 tons annually, but, much more nitrogen could be produced from that source. The 150,000,000 tons of coal from which this sulphate of ammonia is obtained makes also 10,000 cu.ft. of coke-oven gas per ton of coal coked, half of which is hydrogen, which when used for heating purposes gives only a low financial return. This 5,000 cu.ft. of hydrogen per ton of coal coked would combine with one-third that weight of nitrogen to produce 125 lb. of fixed nitrogen. Assuming that one-half the hydrogen in the coke oven gas could be thus utilized there would be a potential production of fixed nitrogen of over 4,000,000 tons annually as against 300,000 tons as now produced.

In the opinion of the public, plants for the manufacture of synthetic ammonia should be erected near cheap water power. Rarely, however, in habitable and developed portions of the globe is that power so cheap that it can compete with that raised by steam, and as it is important that fertilizer be produced reasonably near the market, steam has in many instances a distinct advantage. With steam-generated power, the factory can be placed where distribution can be made at reasonable cost.

According to the calculations made by Doctor Jones even when labor costs and capital charges are taken into account, where coke is $3 and coal $1.80 per ton, it is as cheap to manufacture sulphate of ammonia by fuel as by electricity if the latter costs $10 per horsepower per annum. When coke is $6.30 and coal is $4 a ton the product is obtained as cheaply by fuel as by current which costs $15 per horsepower per annum. Coke has to cost $9.66 and coal $5.80 per ton to justify the expenditure of $20 per horsepower per annum for electrical energy. So fuel is nearly always the preferable means for employment in the operation of electrolytic processes.

ONLY THREE PER CENT USES FERTILIZER

According to Bueb each ton of nitrogen applied to ground gives 660 bushels of grain. As the world is putting a million tons of nitrogen on the soil yearly it is presumably getting 660 million bushels of grain in return, but what is that to the 25 billion bushels, including rice, which the world is producing? Thus less than 3 per cent of the annual crop is dependent on fertilizer. Though the world needs no more food than it is receiving, it could readily use more fertilizer because if used it would lower cost and save labor for it would reduce the area under tilth.

The cost of ammonium sulphate has never been based on the cost of production. The producer got the best figure he could, and never enough to pay him for what the product cost. Nevertheless he went on producing, for having the ammonia in the hydraulic main it did not pay him to throw it away. Consequently the coke producer will never be driven out of the nitrogen market, though the fixationists may be. Yet, it must be admitted, he will doubtless always find the Chilean saltpeter producer more prosperous than either he himself or the manufacturer of fixed nitrogen.

ACREAGE SHOULD BE RESTRICTED

According to Charles J. Brand, executive secretary and treasurer of the National Fertilizer Association, who also spoke at the aforementioned meeting the addition of fertilizer to the soil will produce immense increases in crops, thus making it unnecessary to cultivate so large an area of land and reducing the farm labor requisite to produce it.

Though he did not assert that this fact would tend to cause a restriction of acreage to those areas where physical conditions favor operation and where transportation to market is least expensive, it seems a natural inference from his remarks. It might be well to quote his figures relative to these savings, for they seem to presage a redistribution of the farming population with a large increase in the demand for fertilizer which latter, if it should come, would stimulate greatly the demand for coal either for power to make synthetic ammonia or more directly for the manufacture of sulphate of ammonia from coal or again for the reduction

Sources of Artificially Fixed Nitrogen

Compiled from figures presented by Dr. L. C. Jones

Fixed by direct synthesis of hydrogen and nitrogen in presence of a catalyst—Haber process	Tons Annually	
Oppau and Merseburg plants (Germany)	450,000	
Syracuse plant (New York)	17,500	
Billingham plant (England)	12,500	480,000
Fixed by Claude system		
Lazote plant (West Virginia) say	7,000	
Similar plants in Europe	7,000	14,000
Fixed by Casale system	6,000	6,000
Norwegian power plants		35,000
Scattered Claude, Casale and Fauser plants (Italy, Japan and United States)		20,000
Fixed cyanamid plants		90,000
		645,000

of phosphorus or potash compounds into forms more available for plant assimilation than they could possibly be before reduction.

It is significant, remarked Mr. Brand, in discussing the possibilities inherent in the use of more fertilizer on depleted soils or those which are naturally lacking in plant food that the South Carolina experiment station has demonstrated that by the adequate use of chemical plant food alone a saving of over $42 per bale in the production of cotton can be achieved. On soil otherwise practically identical unfertilized cotton land produced 495 lb. of cotton per acre, whereas cotton land fertilized with 800 lb. of complete fertilizer produced 1,164 lb. Thus with complete plant food 7.8 acres produced 6 bales of cotton, whereas, when no plant food was used, it was necessary to use 18.2 acres.

In Minnesota, where hardly any fertilizer is used, the average yield of potatoes per acre is 97.8 bushels, whereas an adequately fertilized ten-acre farm in California recently produced an average of 1,000 bushels per acre.

The annual crop removes 9,000,000 tons of nitrogen per year from the soil and only 5,450,000 tons are replaced, 3,500,000 tons of this quantity being supplied by the manure and wastes of the farms themselves. This leaves an annual nitrogen deficiency of 40 per cent.

Drop Behind $400,000,000 Yearly

It is estimated that combining the consumption of ammonia, phosphoric acid and potash, the leading crops remove from the soil 17 billion pounds annually valued at $1,250,000,000. This is roughly one-ninth of the total value of crops produced.

The National Industrial Conference, continued Mr. Brand, has estimated that only about 2.4 billion pounds of plant food are restored to the land as commercial fertilizer. This it values at about $225,000,000. In addition the farms themselves restore possibly 8,700 million pounds more of plant food as animal manures and other wastes. There is left a deficiency due to overdraft placed at approximately 5,800 million pounds valued at approximately $400,000,000. In other words, the farmer is drawing from the bank of agriculture each year in the United States $400,000,000 more than he is depositing therein.

Ceasing to quote Mr. Brand, it may be said that the present agitation against the existing railroad freight rates on grain and other farm products is evidence that the arable acreage has overextended itself. Any reduction would result in opening new areas for exploitation which are in no wise needed. It would be better rather to restrict that acreage, giving the acres that can afford a fair transportation rate a more intensive development. The decline in production per acre will soon limit the output and make the use of fertilizer necessary, provided the area under cultivation is not further extended here or elsewhere.

Calculations Prove Coal Cheaper Than Oil as Fuel

Domestic heating is the direct point of contact, and frequently the only one, between the average householder and the coal industry. Of recent years fuel oil has made big inroads into some of the markets once held exclusively by anthracite. Although this fuel has, in most cases, been sold upon a convenience rather than an economy basis it has been claimed by some that it could compete with coal on the basis of fuel price.

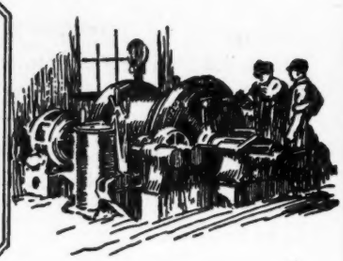
Some years ago, in order to stimulate the sale of anthracite particularly the smaller sizes, several of the hard-coal producers organized the Anthracite Coal Service, the object of which was education of the public along coal-utilization lines. The engineers of this organization have recently completed calculations showing the relative cost of heating with coal and with oil at the various prices of these fuels normally prevailing. These figures are based on an annual consumption of ten net tons of coal or the equivalent of 1,700 gal. of oil. It is further assumed that the oil burner, including the storage tank, will cost $800. Six per cent interest and 10 per cent depreciation is charged on this investment. Gas consumed by the pilot light is reckoned at $15 and current for the motor at $35 per year. Considering these charges anthracite at $14 per ton shows a saving over oil at 8½c. per gallon amounting to $182.50 annually.

Annual Saving at Various Prices Effected by Use of Anthracite, Domestic Sizes, Including Pea

Cost of Coal per Net Ton	Cost of Oil per Gallon — 8½ Cents	9 Cents	10 Cents	11 Cents	12 Cents
$18.00	$142.50	$151.00	$168.00	$185.00	$202.00
17.50	147.50	156.00	173.00	190.00	207.00
17.00	152.50	161.00	178.00	195.00	212.00
16.50	157.50	166.00	183.00	200.00	217.00
16.00	162.50	171.00	188.00	205.00	222.00
15.50	167.50	176.00	193.00	210.00	227.00
15.00	172.50	181.00	198.00	215.00	232.00
14.50	177.50	186.00	203.00	220.00	237.00
14.00	182.50	191.00	208.00	225.00	242.00
13.50	187.50	196.00	213.00	230.00	247.00
13.00	192.50	201.00	218.00	235.00	252.00
12.50	197.50	206.00	223.00	240.00	257.00
12.00	202.50	211.00	228.00	245.00	262.00
11.50	207.50	216.00	233.00	250.00	267.00
11.00	212.50	221.00	238.00	255.00	272.00
10.50	217.50	226.00	243.00	260.00	277.00
10.00	222.50	231.00	248.00	265.00	282.00
	Buckwheat				
$9.50	$169.50	$181.00	$198.00	$215.00	$232.00
9.00	174.50	186.00	203.00	220.00	237.00
8.50	179.50	191.00	208.00	225.00	242.00
8.00	184.50	196.00	213.00	230.00	247.00
7.50	189.50	201.00	218.00	235.00	252.00
7.00	194.50	206.00	223.00	240.00	257.00
6.50	199.50	211.00	228.00	245.00	262.00
6.00	204.50	216.00	233.00	250.00	267.00

Comparative savings effected by the use of coal, calculated in accordance with the above assumptions, are shown in the accompanying table. These figures are based on net tons of coal: another table not here shown has been worked out on a gross-ton basis.

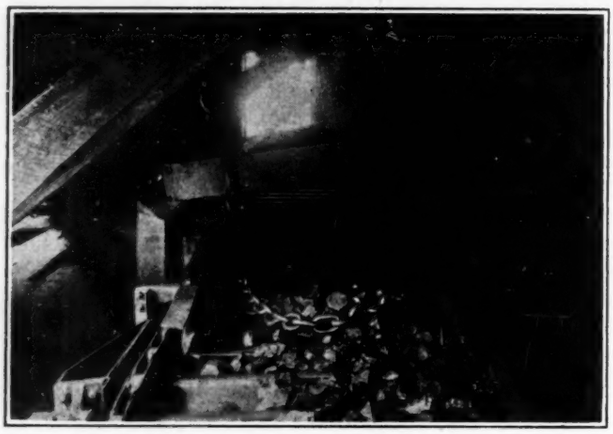
Practical Pointers For Electrical And Mechanical Men



Chain Spreads Coal on Picking Table

Pieces of slate and rock which are hidden by coal on the picking table, are sure to be overlooked, therefore spreading of the coal in a thin layer on the conveyor is just as important as securing trustworthy men to do the picking. In a great many tipples the chute arrangement, in so far as securing proper spreading on the picking table is concerned, is far from the ideal.

At a number of mines in the Harlan field of Kentucky a short piece of heavy solid-link chain is used to further



Spreading Egg Coal on Conveyor

One end of the chain is tied to a stationary support and the other is hooked over the edge of the chute attached to the shaking screen. By dragging under the chain the coal is leveled and the distribution improved.

the spreading. The photograph shows such an arrangement on the egg picking table and loading boom of the High Splint Coal Co., at High Splint, Ky. One end of the chain is tied to a stationary support and the other hooked to the shaking chute of the screen. This chain is quite effective in leveling the coal and spreading it in a thin single layer.

Folding Prints "Face Out" Saves Time Lost in Searching Files

Observation of the office practice of a number of chief electricians indicates that few such officials have a handy way of filing blue prints. Ordinarily the number of electrical prints does not warrant a large-drawer filing case, and as a result the sheets are folded to 8½ x 11 in., or smaller, and put in a drawer or letter file.

In but few instances are the prints labeled on the outside, consequently in hunting for a certain one, many sheets may have to be unfolded and folded up again before the right one is found. Labeling the folded print on the outside is a good method if sufficient information is given, but a still better plan is to fold the sheet with the face out so that the little corner shows.

Even though the title may not definitely identify the print, a glance at the outside usually suffices. About the only objection to this method of folding prints is the wear to which they are subjected and the chance of soiling the face side. Those who for years have used this "face out" method of folding prints state, however, that these objections are of no consequence compared to the advantage secured. If a print is to be taken out on a job where there is a chance of soiling, it can be refolded "face in" for that occasion.

Abrasive Shoes Reduce Tire Turning At New Orient Mine

In view of the diverse practices followed in regard to the types of locomotive wheels and tires used, as well as to the care and maintenance of these tires, the standard practice followed at the world's largest shaft mine, New Orient, is worthy of note.

All of the locomotives at this mine are equipped with steel-tired wheels, and all tires are of the standard "heat-and-shrink" type. Abrasive brake shoes are used to prolong the time between tire turnings.

The practice followed in turning tires is first to take the trucks out from under the locomotive and replace with trucks having newly-turned treads. The worn tires are then removed from the wheels and annealed. Next they are chucked in a lathe and turned. The last step is heating and shrinking back onto the wheel cores. The trucks are then ready for duty on the next locomotive on which the tires are to be turned or renewed.

Reclaiming Mine Locomotive Gear Casings

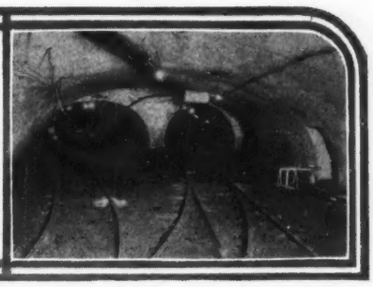
On a recent trip to the shop of a large mining concern I noticed several under sections of locomotive gear cases on the scrap pile. Examination showed that they had been worn through due to rubbing on the road bed or had been cracked in bumping over rough surfaces. In the shop was an oxy-acetylene welding and cutting outfit but the master mechanic on being questioned stated he did think welding the casings practical although he had never tried it.

However, he had some of them brought into the shop and as they were of cast steel the section worn thin on the bottom was cut out with the cutting torch. A patch to fit was cut from some ordinary steel plate and, after being heated and bent to shape, was laid over the hole. The plate was then securely welded into place, ordinary steel welding rod being used as a filler.

On the cracked casings the cracks were 'V'ed open and welded up in the usual manner for a weld of this type. The welded casings were every bit as good as new ones and better still the cost of reclaiming was in most cases considerably less than a dollar each.

Clearfield, Pa. J. F. Eldee.

Underground Operation



Suction Takes Coal from Working Face In Twenty-One Inch Seam

With a bed of coal 1 ft. 9 in. to 1 ft. 11 in. thick, even though it be good and clean, it is not easy to find a profitable means of operation. The Bowburn Colliery, Coxhoe, County Durham, England has such a seam, according to the *Iron & Coal Trades Review*, of London, England. It was formerly cut by standard longwall machinery and loaded by hand into mine cars. Rock had to be removed, however, and though the loaders handled up to 4 tons per man-shift, the number of other laborers employed cut the output per man for the whole working force underground to 0.84 tons.

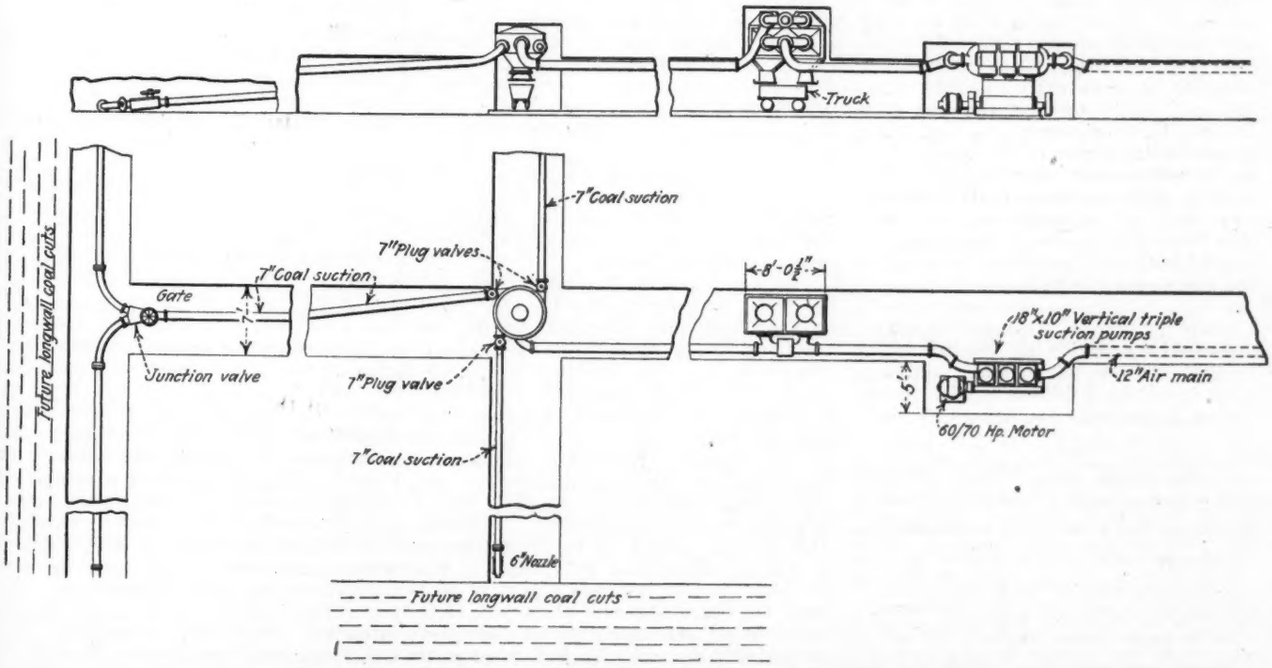
Consequently a suction plant has been introduced into this mine to take the place of the hand loaders. This removes coal from the face in a 5-in. pipe through which it travels to what is known as a discharger, a pocket which removes the large coal from the air and from which the deposited material can be dumped into a train of cars passing under it. The air is then passed to dust collectors where the fine coal which has remained in suspension is collected. The plant had been working about four months when this report was made.

It is interesting to note that thirty or forty years ago the removal of the coal of this mine by suction methods was attempted, but not with any practical result. The present installation is, however, better suited for the purpose than that originally provided.

The system of longwall advancing has been abandoned. With the advent of the suction machine, rooms 12 to 14 ft. wide will be driven with 90- to 120-ft. pillars which will be brought back on retreat. This in a sense may be termed "retreating longwall." The kerf will be made by an arcwall machine at floor level.

Apparently only one room has been driven. It has been advanced about 570 ft. No ripping has been done. The few mine workers in this development, who are all, so far, officials of the company, when they wish to go from the heading to the working face, lie down on a platform resting on ball-bearing wheels of small diameter. As the place is advancing to the dip, the car runs readily to the face and is drawn out by a rope pulled by hand. In future 7-in. pipes will be used for conveying the product, as it is found the air will convey anything, rock and coal alike.

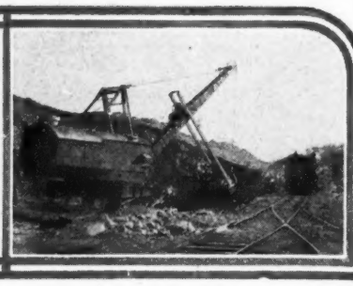
Of the coal passed by the plant 7.24 per cent is more than 1-in. diameter; 48.24 per cent, ¼- to 1-in.; 6.3 per cent, ⅛- to ¼-in.; 23.43 per cent 28-mesh to ⅛-in. and the remainder or that less than 28-mesh amounts to 11.73 per cent. Since the plant has been put in operation the output has risen to 2.36 tons per man below ground per shift. The pumps will exhaust 1,500 cu.ft. of air per min. at a 15-in. water gage.



Coal at Bowburn Mine Is Cut and Sucked Into Pipe and Delivered to Mine Cars

The bed is so thin that the mine workers enter the long rooms riding prone on the platform of a low flat car or "creeper" fitted with ballbearing wheels. The physical work involved in loading the cars is, however, quite small. All that has to be done is to move the suction end of the pipe about and power does the rest. This is highly advantageous in a low bed.

News Of the Industry



Coolidge to Abandon Hands-Off Policy If Coal Crisis Develops Next Spring, Is Belief of Administration Leaders

By Paul Wooton
Washington Correspondent of *Coal Age*

The feeling on the part of some observers within the coal industry that the President's message to Congress in its application to their business is not to be taken at its face value (as set forth in this correspondence last week) apparently is not shared in administration quarters.

Executive officials would not be humane, it is pointed out, if they did not hope devoutly that no serious coal situation will arise next April. They doubtless hope the mine workers and the operators will reach an agreement peaceably. They probably hope that every non-union operator will be more concerned in the future public relations of the coal industry than in immediate profits.

If a strike should come, however, their natural hope would be that the non-union fields will be able to make good their claim and furnish 80 per cent of the country's requirements and thereby greatly delay the time of acute shortage. If the strike were to drag into protracted stages they still would hope against hope that intervention, with all its unfavorable political possibilities, could be avoided, but it is declared that no government could take refuge behind a plea of no legal authority if widespread suffering were resulting. The most conservative government must act when the national welfare is deeply involved. No excuse of lack of authority would be accepted by the electorate for failure to safeguard the national life against any menace. Unemployment, the closing of factories, and the interruption of transportation, to say nothing of physical suffering, would produce a pressure which could not be withstood.

If the United States were to become involved in an experience such as the British just have undergone, it is believed that the very industries which now are opposing coal legislation because of the precedent it sets, would be clamoring for federal intervention. If a strike here were to become so effective as to close 95 per cent of the blast furnaces, and other industries in proportion, would industrialists and business men, in general, still support a hands-off policy, it is asked. Long before that point were reached the pressure would have become so great as to influence even the mildest mannered executive to take drastic steps.

May Discard Cautious Policy

Governments must respond to the popular will. To refuse to recognize it would mean that the people at the first opportunity would put leaders in office who would act. The present administration repeatedly has demonstrated its cautious tendencies, but it also has shown that it is capable of taking quick and decisive action. The President's reputation rests on the drastic step he took in terminating the Boston police strike quite as much as it does on the peace and prosperity that have prevailed during his régime. If there is a strike and should the situation become serious, it is predicted that he would not hesitate to act, legislation or no legislation.

There are Cabinets and leaders in the world who seek to precipitate crises so that they may capitalize them. A tottering dictatorship may divert an attack on itself by creating a foreign crisis. A radical government seeking a pretext to introduce far-reaching changes may welcome a crisis, but to an ordinary administration, representing a political party accustomed to responsibility and looking to the future, a crisis is most unwelcome. Judging this administration on its own record, it will go slowly and avoid stirring up an issue on which bitter attack is certain, but there is reason to believe that there is no determination on the part of the administration to wed itself to a hands-off policy, regardless of developments.

In this connection it is believed the British government would have yielded to the pressure for the seizure and operation of the mines had it not been for the fact that there was no way to require the miners to work for a wage that would have permitted even the government to conduct the industry at a profit. Had it been only a matter of forcing employers to treat with workmen, it is obvious that even the strongly held British principle of individualism would have been swept aside by the irresistible character of demand. The government always is in a position to discipline responsible employers, but the employees usually are beyond its reach. The position of the United Mine Workers is so desperate at this time that none will be surprised if it is its strategy to obtain federal intervention.

EDITOR'S NOTE—*The foregoing Washington letter reflects certain views of official Washington. Due to the fact that policy as a rule prevents government officials from permitting their views being quoted directly, the authority for these reports is necessarily somewhat vaguely referred to. The views reflected are not those of any one group of officials, but of different men, in the legislative and executive departments. There is no necessary connection between their views and* COAL AGE *editorial policy; neither do they necessarily represent Mr. Wooton's personal views. It is felt that the opinions thus faithfully reflected will be of great interest to the industry. Where opinions are cited from sources outside of the government, the source will be specifically stated.*

Briton Warns Countrymen Of Our Low Standards

American industrial methods should not be copied too closely by the British, according to Sir Harold Bowden, bicycle magnate, who recently returned from a trip to America.

"I do not write in an envious spirit," Sir Harold declared. "I am filled with admiration for much of what I saw. But no Englishman can feel sure, when he looks at the conditions of American industry and the increasingly low standard of intelligence demanded of the majority of its workers, that the prosperity of that great self-supporting continent is solidly founded. It is as bad for nations as for individuals to gain the whole world at the cost of their own souls."

If there were ever a decline in prosperity in America, in the opinion of Sir Harold, democracy there might have "neither the character nor the stability to weather the storm." The lack of a system of apprenticeship in America and the fact that unskilled laborers earn so much, he believes, will produce harmful results.

"There is already a dearth," he says, "of craftsmen and America relies for its technical skill very largely upon men who are tempted from Britain by the promise of far higher wages than they can get here."

However, Sir Harold urges the adoption of Henry Ford's "ruthless" efficiency as a means of recovering Britain's industrial standing.

Vote On Parker Measure To Control Coal Industry Postponed Till January 4

A vote by the Committee on Interstate and Foreign Commerce of the House on the administration coal bill introduced by Representative Parker of New York will not be taken until Jan. 4. After having stated early last week that a vote would be taken on Dec. 21, the New York Congressman, who is chairman of the committee, said on Friday that such action would not be taken until the later date.

Whether or not there will be a vote that day depends on the action of the committee this week, when the committee will meet for the express purpose of agreeing upon the date for consideration and vote on the bill. The consideration likely will be brief and probably no hearings will be held. According to present indications, a vote may be deferred until Jan. 10 or 11 to permit of a full attendance of the committee. Several members, including Representative Denison, Illinois, an opponent of the bill, say that it will be difficult for them to arrange to be present on the 4th, the day after Congress convenes following the holiday recess. It is possible that the committee will be deprived of the services of Representative Denison, as he is being prominently mentioned for appointment to fill the vacancy on the federal bench in southern Illinois caused by the resignation of Judge English.

Under the provisions of the Parker bill authority is given to the President to investigate and to attempt to settle by mediation strikes or shutdowns in the coal industry. Authority also is given to distribute coal in time of emergency to prevent skyrocketing of prices and a possible shortage. This will be regulated by priority on railroad cars. Representative Parker said he hopes the bill will be passed at this session so that the public will be protected in the future. President Coolidge recommended the bill.

Under unanimous consent, Senator Copeland failed to bring his coal bill before the Senate Dec. 17. Senator Reed, Pennsylvania, objected.

Nationalization Petition In

Representative Victor Berger, Socialist, Wisconsin, introduced last week a petition of various citizens of the United States and of the State of New Jersey to enact legislation to bring about national ownership and democratic management of all coal mines under conditions which will: (1) Protect the nation from paying on a basis of swollen valuation; (2) recognize the interests of the workers organized in their own union; (3) guarantee democratic administration in the place of bureaucracy, and expert technical leadership in place of partisan jobholding.

Seldom has there been such activity and lively interest with respect to coal legislation on Capitol Hill as at present. This activity is not reflected in debate on the floor of Congress but rather in the marshaling of the forces for and against legislation. Armed with facts and figures legislators from the coal districts, as well as business men from other sections, are decidedly in the open in their resolute opposition, regardless of the source of support of coal-control bills.

A distinct "coal" consciousness has grown up among those Senators and Representatives who hail from coal-mining districts. This knows no political party, and, while not operating along the familiar lines of a farm bloc, at the same time is proving a most formidable barrier to the hopes of those who would gain political prestige placing control of the coal industry in bureaucratic hands.

Sends Family to Poland to Cut Expenses

Stanley Scygiel, who works in a mine near Lansford, Pa., finds his large family such a strain on his earnings that he decided to send them back to his old home in Poland. The children range in age from 18 months to 14 years. Picture shows the family snapped aboard the "Berengaria."

Wage Increases Continue To Go Into Discard

Many bituminous coal mines in Cambria and Somerset counties, Pennsylvania, went back to the 1917 scale on Dec. 16, notices to that effect having been posted a few days previous. The old scale under which rate the miners will be paid, is as follows: Pick mining, including car pushing, $1.06 per gross ton; machine loading, including car pushing, 70c. per gross ton; cutting and screening, 12.7c. per gross ton. Companies returning to the old scale include the Knickerbocker Fuel Co., Haws Refractories, Valley Smokeless Co., Listie Coal Co., the mines of the Bethlehem Mines Corporation in the Johnstown district, and most other mines in Cambria County and also in Somerset County which advanced wages during the peak of the rush preceding the collapse the British coal strike.

Operators in the Kanawha field of West Virginia, says a report from Pittsburgh, have been unable to reach an agreement on wages. Producers to the north of the river favor a reduction to the 1917 scale, which was in effect prior to Nov. 1, but those south of the river are in favor of a continuation of the higher rate. According to a report from Cleveland early last week, nine mines in the Kanawha region had posted notices that they would return to the 1917 scale, reducing the day wage from $7.50 to $5, effective Dec. 15.

Mahoning Coal Railroad Co. has declared a dividend of $12.50 on the common and the regular semi-annual dividend of $1.25 on the preferred. Common dividend is payable Feb. 1 to stock of record Jan. 14. Preferred dividend is payable Jan. 3 to stock of record Dec. 27.

Bill for Regional Boards To Handle I. C. C. Cases Rouses Strong Opposition

Formation of seven regional commissions with original jurisdiction over business that now comes before the Interstate Commerce Commission was proposed in a bill introduced in the Senate at Washington on Dec. 16 by Senator Hawes, Democrat, of Missouri. All decisions of the regional groups would be subject to review by the Commission functioning in Washington.

Senator Hawes said complaints against the present system were based on delays in decisions and expenses of attending hearings in Washington.

Railway presidents, officers of state public service bodies and heads of many national trade organizations appear to be opposed to any change in the transportation laws that would diminish the authority of the Interstate Commerce Commission in regulating railroads or restore to the states the power over carriers which they exercised prior to Supreme Court decisions restricting the states to intrastate regulation.

Evidence of this is shown in a hundred or more letters received by Representative Homer Hoch of Kansas, who sought information on whether the work of the Interstate Commerce Commission could be lightened and made more effective if it were broken up into regional boards, or, as an alternative, if its powers be curtailed and larger authority be vested in state regulatory bodies.

Among those who responded to Representative Hoch's inquiry on this subject were Robert S. Lovett, of the Union Pacific; L. W. Baldwin, of the Missouri Pacific Lines; Hale Holden, of the Chicago, Burlington & Quincy R.R.; E. J. Pierson, of the New Haven System; Alfred F. Thom, general counsel of the American Railway Executives; William A. Prendergast, chairman of the New York Public Service Commission, and Joseph B. Eastman, chairman of the Interstate Commerce Commission.

Nearly all of these expressed opposition upon the proposal to subdivide the Interstate Commerce Commission into regional boards, as proposed by Senator Hawes, of Missouri. The testimony of the railroad men was that the states should be kept within bounds and not permitted to touch interstate commerce.

Howat Victory Short Lived In Kansas Union Fight

Alexander Howat, who has been fighting to obtain control of the Kansas miners' union organization, which he lost in his battle with the international union and the state several years ago, won a hollow victory in litigation heard in the Crawford County District Court last week. While the court granted an order requiring the district officials of the United Mine Workers to put the names of three Howat followers on the ballots to be used in the biennial election it followed this with an order staying the first order pending an appeal to the State Supreme Court.

Legal action to enjoin district officials of the United Mine Workers from keeping his name off the district ballot in the election was filed Dec. 10 by John Fleming, international board member from district 14 until 1921, who again sought that office. Fleming, member under the Alexander Howat régime, which lasted until October, 1921, was suspended at the time similar action was taken by John L. Lewis, international president, against Howat.

Fleming's suit followed a communication from President Lewis in which the mine head named Howat, August Dorchy, deposed vice-president; Fleming and others as ineligible to run for district offices.

Pennsylvania Senator Wins Fight for I.C.C. Post

Senator David A. Reed (R.) of Pennsylvania, achieved the objective of his long fight to have Pennsylvania represented on the Interstate Commerce Commission on Dec. 20, when President Coolidge nominated Cyrus E. Woods, former Ambassador to Spain and Japan and former Secretary of State of Pennsylvania, to succeed Frederick I. Cox, of New Jersey, whose term recently expired.

Considerable perplexity was said to confront President Coolidge in reaching a decision on filling the vacancy.

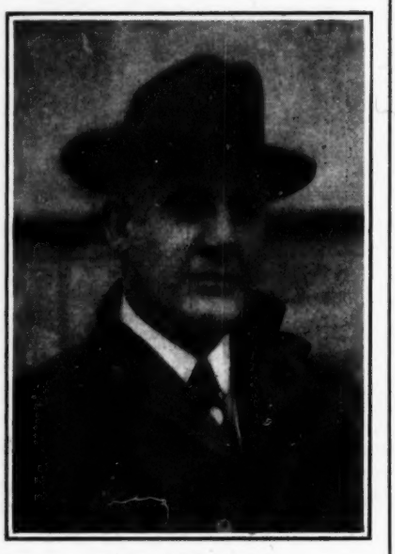
Some months ago the Senator from the Keystone State threatened to carry his opposition so far as to oppose other administration nominations if an assurance were not given that his plea for a Pennsylvanian on the Commission would be heeded.

Mr. Woods is a lawyer who has had experience in industrial questions and was for a time chief counsel for the Pittsburgh Coal Co. His experience qualifies him for the place, in the opinion of Mr. Reed.

Senator Edge of New Jersey worked hard to bring about Mr. Cox's reappointment and some lawyers and labor leaders supported the movement. The latter contended that the selection of another man would tend to destroy the traditions of the Commission and appear as an attempt to "pack" it with conservatives who might follow the ideas of those now seeking to obtain favorable action on soft-coal rates to the West.

According to some opposed to the retirement of Commissioners after they have gained experience by a four-year term, the opposition to Mr. Woods might be strong enough to prevent his confirmation. Some members of the Senate group, opposed to the seating of Senators-elect Smith of Illinois and Vare of Pennsylvania, it is understood would connect Mr. Woods with the expensive primary campaign in Pennsylvania in an effort to prevent his confirmation.

The fight for maintenance of the semi-judicial aspect of the Commission, as against selection on a patronage basis, has become so strong as to cause former Commissioners to protest to President Coolidge. Lawyers have written to him to protest against the retirement of Commissioner Cox.



Alexander Howat
Stormy Petrel in Kansas Miners' Union

Lewis Ticket in Lead

Election of John L. Lewis, international president, and the rest of the administration ticket of the United Mine Workers seems assured by early returns from all parts of the country according to reports at union headquarters in Indianapolis. Philip Murray, vice-president, and Thomas Kennedy, secretary-treasurer, were running mates with Lewis in the balloting Dec. 14.

Their opponents, John Brophy, of Pennsylvania, for president; William Stevenson, of Michigan, for vice-president, and William Brennan, of Pennsylvania, for secretary, were said to be running far behind.

Having had no opposition for the office of president of district No. 2, United Mine Workers, which includes the greater portion of central Pennsylvania, James Mark, former vice-president, was elected on Dec. 14. Mr. Mark succeeds John Brophy, who was a candidate for international president against John L. Lewis. Mr. Brophy held the post in District No. 2 for ten years. Richard Gilbert, the present secretary-treasurer, had opposition in the person of William Callahan, of Portage. Early returns indicate that Mr. Gilbert is elected, although it will be some time before the vote is all computed.

Loree Assails N. Y. Central On B. R. & P. Lease

Charging that an attempt was being made to oppress small roads for the benefit of the larger ones, Leonor F. Loree, president of the Delaware & Hudson Co., asked the Interstate Commerce Commission on Dec. 16 to disregard a suggestion by the New York Central R.R. that no railroad lease be authorized unless the carriers involved connect.

Mr. Loree's charge was contained in a brief filed with the Commission in answer to one filed by the New York Central opposing his plan to lease the Buffalo, Rochester & Pittsburgh Ry., which lacks some 160 miles of connecting with the Delaware & Hudson.

Both the New York Central and the Baltimore & Ohio were anxious to obtain control of the Buffalo, Rochester & Pittsburgh when the Delaware & Hudson head snatched it from their grasp by a liberal offer to its stockholders. Mr. Loree's quarrel with the trunk line heads dates back to the time when they ignored him in formulating a tentative plan for the allotment of Eastern railroads in general territorial consolidation. An examiner for the Commerce Commission recommended recently that his proposal to lease the Buffalo, Rochester & Pittsburgh be denied and suggested that it might be considered as an addition to the Baltimore & Ohio.

"It is not strange," declared Mr. Loree's brief, "that the New York Central should desire a rule excluding the acquisition, however plainly in the public interest such acquisition might be, by one railway of any disconnected railway. Such a rule would have practically no restrictive effect upon the New York Central, but it would sharply restrict every possible effort to build up an effective competitive system by combinations of the many smaller railway entities that parallel or cross or are adjacent to the railways of the New York Central System.

"There are no important railways and few railways of any sort from New England and Canada to the Great Lakes and the Mississippi and north of the Ohio and Potomac rivers with which the New York Central does not connect in the manner that would be essential to an absorption under its proposed rule.

"On these terms, none of the smaller railways could contribute anything, except the surrender of their existence, to the consummation of the policy of consolidation prescribed by Congress."

Charles Evans Hughes, counsel for the Delaware & Hudson, filed a brief with the Commerce Commission Dec. 20 in which he intimated that there was a vast intrigue among big Eastern carriers in building up systems under proposed consolidations of the railroads. Commenting on the claim of the New York Central that the Commission should require physical connection when one carrier sought control of another, he said: "The New York Central asks the Commission to do what it has no authority to do; that is, to add to the law a general prohibition of leases of disconnected railroads."

Bittner Gets New Trial; Scored for Speech

In granting Van A. Bittner, international representative of the United Mine Workers in charge of union activities in northern West Virginia, another hearing and setting aside the fine of $500 and the sentence six months in jail imposed by Judge I. G. Lazelle of the Circuit Court of Monongalia County, for contempt, the West Virginia Supreme Court last week declared that the speech made by Bittner at Fairmont last May could not be too severely condemned.

The court remarked in its opinion that although "the circumstances create a strong suspicion that he [Bittner] did know" of the injunction at the time he made a speech in Fairmont which was one of the principal matters in evidence, nevertheless "suspicious circumstances are not sufficient to convict in a criminal case." The court set aside the action of the circuit judge on the ground that a contempt proceeding required the same proof as a criminal trial, and inasmuch as it had not been proved beyond a reasonable doubt that Bittner did have knowledge of the injunction, therefore the court felt the case should be remanded.

Referring to Bittner's speech at a union mass meeting in Fairmont last May, Judge Lively, who wrote the court's opinion, said that the language of the speech "indicates contempt for any injunction issued by any court in an industrial dispute. It was calculated (if not designed) to inflame the hearers and to incite them to violate all such injunctions. It cannot be too severely condemned. Had there been evidence beyond a reasonable doubt that Bittner knew of the injunction, we would not hesitate in affirming the judgment, but we find it wanting in this respect, and, giving him the benefit of the doubt, we have come to the conclusion to reverse the judgment."

The court refused to hold that Bittner should receive a trial by jury, holding that the circuit court has power to punish contempt summarily.

Civil Service Tests Announced

The U. S. Civil Service Commission announces an open competitive examination for assistant physicist. Applications must be on file at Washington, D. C., not later than Jan. 11, 1927. The examination is to fill vacancies in the Bureau of Standards and the Bureau of Mines, Washington, D. C., and vacancies in positions requiring similar qualifications. The entrance salary in the departmental service is $2,400 a year.

The Commission also announces an examination for engineering aid, applications to be on file not later than Jan. 15. The examination is to fill vacancies in the Interstate Commerce Commission and in positions requiring similar qualifications. The entrance salary is $1,680 a year. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the board of civil service examiners at the post office or custom house in any city.

New German Labor Court To Adjust Disputes

A Labor Court law, which creates a special court of jurisdiction for all disputes, individual or collective, arising out of employment, which was sponsored by the Cabinet, has been passed by the German Reichstag. One employer and one employee will sit as assessors with the Labor Court judges, who may be non-professional.

A measure also has been submitted to create a permanent Federal Economic Council to replace the present provisional council, which dates from 1920. Experience has shown that the provisional council, with its 326 members, was too large.

The "definitive" council will have 123 members, of whom one-third will represent capital, one-third labor, with the remaining third representing various social and professional interests. The council will continue to act only in an advisory capacity, as its decisions are not binding. But the government is compelled to obtain the judgment of the council on all economic, social and financial bills before submitting them to the Reichstag.

B. & O. to Use Reading Rights

It is the intention of the Baltimore & Ohio Railroad Co. to exercise its 606,650 rights to subscribe to 303,325 certificates of interest in the Reading Coal Corp. before Dec. 31 upon payment of $2 per right. It will then have until July 1, 1927, to dispose of the certificates or to dispose of its interest in the railroad company. The latter date has been fixed by court as the final date for conversion of certificates into permanent shares of stock in the coal company. Ownership of coal shares and railroad shares may not be held simultaneously and Baltimore & Ohio's interest in its connection with the Reading indicates that the coal shares will be disposed of before July.

Thus far about 51 per cent of the rights to subscribe to coal certificates have been exercised. B. & O.'s and Widener holdings of 100,000 rights were the two largest blocks remaining unconverted. Intention of the Widener interests is not known but it is expected that its rights will be converted and that sale of its certificates, with those of the B. & O., will be made within the next few months to a banking syndicate.

L. & N. Now on $7 Basis

The Louisville & Nashville Ry. declared a semi-annual dividend of $3.50, payable Feb. 10 to stock of record Jan. 14. This places the stock on a definite $7 annual basis, against $6 in the preceding two years. In 1923 a stock dividend of 62½ per cent was paid in addition to cash payments aggregating approximately $6.56 a share on the old stock issue.

Bernet Succeeds Underwood As President of Erie

Frederick D. Underwood formally resigned Dec. 17 from the presidency of the Erie R.R. and directors elected John J. Bernet, head of the Nickel Plate, to succeed him. Mr. Bernet will take office on Jan. 1.

Mr. Underwood will remain as a director of the road and retain the office at 50 Church Street, New York City, which he occupied while the Erie was under federal control. When asked regarding a report that he would act in an advisory capacity for the road, he replied he had heard nothing of it.

Railroad men who know the new president of the road are outspoken in praise of his ability as an operating man. He spent a full apprenticeship as a journeyman blacksmith before entering the railroad business. While working as a blacksmith he studied telegraphy at night until be became sufficiently proficient to accept a position with the Lake Shore & Michigan Southern R.R. as a telegrapher.

Mr. Bernet soon was promoted to trainmaster and attracted attention by his assumption of responsibility of every sort connected with his work.

Mr. Bernet's new task is admitted to be the most difficult one which he has faced in his entire career. Whether the Erie is operated separately by the Van Sweringen brothers, who control the Nickel Plate, or is included in a general plan, he will have to effect new traffic alliances and build up a road long operated under the handicap of insufficient funds. In the matter of new money he will be better situated than Mr. Underwood was as the road's credit position is rapidly improving.

Mr. Underwood's twenty-five and one-half years in office covered three serious money panics and two coal strikes. In the face of these he built up the Erie's total revenues from $40,700,000 to $120,000,000, which failed to produce dividends only because of a wrecked financial structure.

Information in the New York financial district was that Mr. Bernet will eventually head the Van Sweringen trunk line if the brothers are able to put through their plan of railroad consolidation.

Fess Measure Would Promote Railway Consolidations

An amendment to the Interstate Commerce Act to promote the consolidation of railroads is proposed in a bill introduced in the Senate at Washington Dec. 17 by Senator Fess, Republican, Ohio. It was referred to the Interstate Commerce Committee, which already has the Cummings Railroad Consolidation bill before it.

The measure "authorizes and encourages" unification in order that adequate and efficient transportation may be maintained and necessary weak and short lines be preserved. It also repeals that section of the 1920 act which requires the Interstate Commerce Commission to map the systems of the country and provides permissive consolidation as transportation facilities justify.

Feiker Managing Director Of A.B.P.; Neal Out

The executive committee of the Associated Business Papers has created a new office in the organization, that of managing director. Frederick M. Feiker, who has been appointed to this office, has been vice-president of the Society for Electrical Development for several years.

Born in Northampton, Mass., in 1881, Mr. Feiker was graduated as an electrical engineer from Worcester Polytechnic Institute in 1904. He then became "technical journalist" for the General Electric Co., writing for trade and industrial papers. In the course of this work he made a detailed study of the editorial problem of all the papers by personal contact with the editors, and became convinced of the need for a "horizontal" paper to serve the executives of all industries.

In pursuit of this idea he joined the A. W. Shaw Company and established the magazine *Factory*, and later was made chairman of the editorial board for *System* and *Factory*. While with Shaw he spent two winters on leave at Harvard University helping to organize the industrial courses in the Harvard Graduate School of Business and lectured there. In 1915 he went with the McGraw Publishing Company as editor of the *Electrical World* and guided the early development of *Electrical Merchandising*, becoming eventually vice-president and editorial director of the McGraw-Hill Company.

Aided Hoover Reorganization

In 1921 Herbert Hoover invited Mr. Feiker to join him in Washington as Assistant to the Secretary of Commerce, to personally aid him in carrying out plans for the reorganization of the Department of Commerce in its relations with trade and industry, and he obtained leave from the McGraw-Hill Company and spent eighteen months in government work. During that period he established the Division of Simplified Practice in the Bureau of Standards, revamped the Bureau of Foreign and Domestic Commerce on the basis of service to commodities, assisted in the organization of the monthly survey of business statistics in the Bureau of Census and remade the department's publication, "Commerce Reports," besides acting as adviser on personnel for the department as a whole.

It was during this period that he became impressed with the need for organizing the common interests of diversified industries to co-ordinate and direct their relationship with the government, the educational institutions and the press. It was in line with this thought that in co-operation with A. C. Pearson, now chairman of the board of directors of the United Publishers Corporation, and Edward J. Mehren, vice-president of the McGraw-Hill Company, he arranged the monthly conferences of the National Conference of Business Paper Editors with Mr. Hoover in Washington, which have continued now for three years, and out of which has grown a continuous close contact between the government bureaus, the United States Chamber of Commerce and the business press.

When this work was completed in 1923, Mr. Feiker became operating vice-president of the Society for Electrical Development, where he has done an outstanding job in organizing competitive commodity promotion campaigns for groups of manufacturers.

Mr. Feiker also holds the title of "Expert Consultant" to the U. S. Department of Commerce, and is vice chairman of the Advisory Committee on Distribution Statistics, of which Owen D. Young is chairman, and a member of the Advisory Committee to the Division of Domestic Commerce of the Bureau of Foreign and Domestic Commerce, both appointed by Mr. Hoover.

Jesse H. Neal, who for eleven years has served as executive secretary of the Associated Business Papers, has resigned, effective Jan. 1. He and Mrs. Neal will leave on a six-months' Mediterranean trip in January.

After January 1 the headquarters of the A. B. P. will be located at 52 Vanderbilt Avenue, New York City.

October Railway Earnings Set New Record

The railroads established a new monthly record in their net operating income for October, it was revealed last week, when the Bureau of Railway Economics made public a report showing that 185 Class 1 carriers had received $146,099,828 in net for that month, compared with $145,134,536 in September and $137,999,971 in October, 1925.

Net operating income for the first ten months of the year amounted to $1,035,475,630, compared with $936,960,604 in the same period of last year. The current year is, in fact, the first time the railroads have passed the billion mark in the first ten months. They are now about $100,000,000 short of the total net railway operating income for 1925, and indications are that November and December will bring more than $200,000,000 in additional net, giving a total for 1926 of around $1,240,000,000.

Railroads Buying Open Tops

The Norfolk & Western Ry. has placed orders for 2,000 steel hopper coal cars of 70 tons capacity, divided, 1,000 to Ralston Steel Car Co. of Columbus, Ohio, and 1,000 to the Virginia Bridge & Iron Co., of Roanoke, Va.

Inland Collieries Co., Chicago, has given an order for 100 mine cars to the Koppel Industrial Car & Equipment Co., subsidiary of the Pressed Steel Car Co.

Pennsylvania Coal Co., Dunmore, Pa., has placed an order for 50 mine cars with the American Car & Foundry Co.

During the first nine months of the current year 35,487 new coal cars have been added to the rolling stock of the railroads. Total purchases of this character during the last four years were 216,131.

Daily Rate of Coke Output Still on Upgrade

Production of byproduct coke in the United States during November declined 69,000 net tons when compared with the preceding month. The decrease was due to the shorter month, for the daily rate of output rose from 122,975 to 124,783 tons, with one exception the highest daily rate on record. Total production for November was 3,743,000 tons, compared with 3,812,000 tons in October. There were 76 active plants, the same number as in October, and these plants produced about 92 per cent of their capacity.

Output of beehive coke during November remained practically stationary, there being a decrease of 8,000 tons, or less than 1 per cent, when compared with the preceding month.

Production of all coke totalled 4,602,000 tons, the byproduct plants contributing 81 per cent, and the beehive plants 19 per cent.

Output of Byproduct and Beehive Coke in the United States*

(In thousands of net tons)

	By-product Coke	Beehive Coke	Total
1923 monthly average	3,133	1,615	4,748
1924 monthly average	2,833	806	3,639
1925 monthly average	3,326	946	4,272
August, 1926	3,749	752	4,501
September, 1926	3,641	1,310	4,951
October, 1926	3,812	867	4,679
November 1926	3,743	859	4,602

*Excludes screenings and breeze.

The total quantity of coal consumed at coke plants in November was about 6,734,000 tons, of which 5,379,000 tons were consumed in byproduct ovens and 1,355,000 tons in beehive ovens.

Estimated Monthly Consumption of Coal in Manufacture of Coke

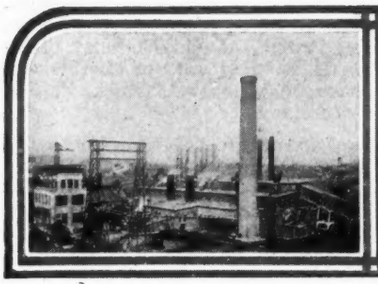
(In thousands of net tons)

	Consumed in By-product Ovens	Consumed in Beehive Ovens	Total Coal Consumed
1923 monthly average	4,523	2,507	7,030
1924 monthly average	4,060	1,272	5,332
1925 monthly average	4,759	1,452	6,211
August, 1926	5,386	1,188	6,574
September, 1926	5,232	2,066	7,298
October, 1926	5,477	1,367	6,844
November, 1926	5,379	1,355	6,734

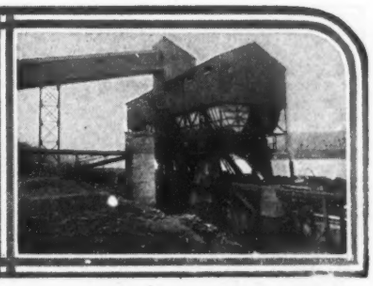
Of the total production of byproduct coke during November, 3,089,000 tons, or 82.5 per cent, was made in plants associated with iron furnaces, and 654,000 tons, or 17.5 per cent, was made at merchant or other plants.

De Golyer Is Nominated for A.I.M.E. Presidency

Ballots have been distributed by the American Institute of Mining & Metallurgical Engineers, on which appear the names of E. DeGolyer, for director and president; George Otis Smith and F. Julius Fohs, each to be directors and vice-presidents; J. O. Elton, Daniel C. Jackling, David Levinger and Richard Peters, Jr., directors. All ballots must be received prior to Feb. 8, 1927, in order to be counted. It is generally conceded that nomination is tantamount to election.



News Items From Field and Trade



ALABAMA

Study Alabama Coals.—A specific-gravity study of Alabama coals has been undertaken by the Southern Experiment Station of the Bureau of Mines, located at Birmingham-Tuscaloosa. This problem has been taken up for the purpose of obtaining essential data as to physical characteristics of Alabama coals and impurities in the coal beds. A University of Alabama fellowship man has been assigned the problem of making specific gravity determinations and getting the necessary data as to the chemical characteristics of the samples.

Eureka Mine Again Active.—The Eureka Coal Co. has resumed operations at its Eureka mine, which had been idle for several months. The property is owned by the Connors-Weyman Steel Co., Birmingham, and is located south of that city on the Atlanta, Birmingham & Atlantic R.R.

COLORADO

To Offer Public Coal Leases.—Offering at public auction of two tracts of public coal lands in Colorado has been authorized by the Interior Department. Both tracts are located in Gunnison County. One comprises 640 acres and under the terms of lease the successful bidder must pay the government a royalty of 25c. per ton on all coal mined. A minimum investment of $50,000 during the first three years of the lease also is required with a minimum production of 30,000 tons a year beginning with the fourth year of the lease. The other tract includes 40 acres. The terms of the lease under which it is offered provide for the payment of a royalty of 25c. per ton, a minimum investment of $5,000 and a minimum production of 2,000 tons a year.

ILLINOIS

Law Enforcement for Herrin.—Better police protection is promised for Williamson County, which embraces Herrin, scene of riots and bloodshed. Oren Coleman, 40 years of age, bachelor, university graduate, World War veteran, retired farmer and formerly a high-school principal, has been elected sheriff. His first act was to arrest the former sheriff, George Galligan, on a murder charge in connection with a gun battle in 1924, in which six men were killed. The new sheriff is more than six feet tall and stockily built, with a square, fighting jaw. He was elected on a law-enforcement ticket, and can pull out a big posse whenever he needs one. Galligan, 38 years of age, former miner, after four years in the service, plans to return to mining, which he followed since eleven years of age. Galligan claims that with but one deputy he was handicapped in enforcing the law.

Fire of unknown origin at the Mt. Olive & Staunton Coal Co. plant near Staunton, early Dec. 6, caused about $10,000 damage and resulted in closing down the mines of the company for several days. The blaze started in the engine room and lasted for three hours before being extinguished. The coal crusher was demolished and the conveying machinery damaged.

INDIANA

Insists on Safety Lamps.—The disastrous explosion on Dec. 9 in Francisco mine No. 2, near Princeton, has inspired Norman H. McClevey, general superintendent of the Pike County Coal Co., at Petersburg, to ask the state legislature to pass a law forcing Indiana mine operators to compel their employees who work underground to wear safety lamps. Carbide lamps are now used in over 90 per cent of the mines being operated in the state. Had the miners in the Francisco mine been equipped with safety lamps, says Mr. McClevey, the recent tragedy would have been averted. Superintendent McClevey went to Indiana from the deep coal fields of Illinois, and opened the Atlas Nos. 1 and 3 mines. The Atlas Mine No. 1 is the largest and best equipped mine in southern Indiana.

Annual Output Higher.—Coal mines in Indiana produced 812,740 more tons of coal in the fiscal year ending Sept. 30 than in the previous year, it is shown in the annual report of Albert C. Dally, head of the state department of mines and mining. During the last fiscal year a total of 18,506,149 tons was mined, compared with 17,693,409 the year before. The number of fatal accidents in the coal mines dropped from 101 to 46. Thirty-seven mines were idle during the entire fiscal year as compared with forty during the year before.

NORTH CAROLINA

North Carolina has a reserve supply of coal deposited in the old "Triassic" basin, extending in a diagonal direction in the central part of the State, according to a report made to the Department of Conservation and Development by H. G. Bryson, State Geologist. Figures on output for the past two years show that this enormous natural storehouse of wealth has hardly been tapped. In 1924 only 57,094 tons was taken out and in 1925 the total had increased to only 65,153 tons. Only two mines of importance are in operation.

OHIO

To Sell Pan Handle Properties.—E. W. Blower, Columbus, receiver for the Pan Handle Collieries Co., located in Jefferson County, announces that the property, consisting of 700 acres of surface and 400 acres of coal, will soon be put up for sale. The date has not yet been fixed by the Common Pleas Court of Jefferson County, where the receivership proceedings were brought. The plaintiff was the Huntington National Bank of Columbus, holder of a mortgage on the property. The mine is well equipped and has a capacity of about 250 tons daily. The receivership does not involve the Hisylvania Coal Co., and the Piney Fork Coal Co., both of which concerns are controlled by J. W. Blower and his sons. The former corporation has abandoned its operations in the Hocking Valley at Glouster and has opened a large mine at Swiss, W. Va., in the Kanawha field. This mine has an output of about 300 tons daily. The Piney Fork, which has been changed from a stripping operation to shaft mining, is located in Jefferson County and is working full time.

Maynard Affairs Settled.—Receivers W. S. Harmon and Frank L. Stein of the Maynard Coal Co., who have been engaged in settling the affairs of the company for three years, report that outside of an income tax claim by the government and the disposal of the mineral rights under 650 acres of land in Gallia and Meigs counties, the affairs are settled up. All of the mines and dock interests have been disposed of and dividends have been paid to stockholders.

The Hocking Valley Ry. has started to store coal at the storage plant of the Columbus Railway, Power & Light Co., at Groveport, in anticipation of a suspension in Ohio on April 1. The plant at Groveport has been enlarged by the addition of another track and it is planned to store from 250,000 to 300,000 tons. Reloading is done by an immense crane.

A record in tonnage for a single shipment of coal down the Ohio River was established on Dec. 2, when the towboat *E. D. Kenna* came into Cincinnati with seventeen steel barges containing 13,500 tons of fuel. This was put over the elevators at Huntington, W. Va., and brought a distance of over

Pinnacle Rock and Abbs Valley from Windy Gap

Abbs Valley, Virginia, was the location of the first white settlement in the Pocahontas region. It was taken from the Indians at a heavy price in scalps.

175 miles. The cargoes were moved by the Philadephia & Cleveland Coal Co. and its president, A. C. Ingersoll, to celebrate the event set a dinner in the palatial dining room aboard the *Kenna* to which associates in the trade and customers were invited. The *Kenna* cost $200,000. The steel barges are 175 ft. long, 26 ft. wide and 11 ft. deep.

Inconvenience and annoyance caused by smoke and fumes from burning dumps at Ohio coal mines may be compensated for according to a verdict of a jury returned in the common pleas court of Belmont County when the sum of $300 damages was assessed against the Wheeling & Lake Erie Coal Co., an M. A. Hanna subsidiary, in a suit filed by John Kryta. Numerous other suits based on the emanation of smoke and sulphur fumes from dumps are pending and it is believed these will be pushed to trial.

The Columbus Board of Purchase, of which H. C. Cain is secretary, will receive bids Jan. 30 for 15,000 tons of Hocking nut, pea and slack for the municipal electric light plant; 10,000 tons of the same kind of coal for the Water Works Department and 3,200 tons of Hocking nut, pea and slack and 1,300 tons of West Virginia nut, pea and slack for the garbage-reduction plant. All prices are to be f.o.b. mines.

The Northern States Coal Co., of Kent, Ohio, has been incorporated with a capital of $50,000 to mine and sell coal. The incorporators are John L. Harris, A. J. Harth, Jr., W. A. Sparrow, Jr., Blake C. Cook and R. J. Adams.

PENNSYLVANIA

New Inspectors Assigned.—The seven anthracite mine inspectors recently appointed by Governor Pinchot have been assigned to duty by Secretary of Mines Joseph Walsh. The assignments, which may be temporary, are as follows: Bert Golden, 7th District, with headquarters at Taylor; John L. Picton, 14th District, Nanticoke; Wm. J. Clements, 17th District, Lansford; Timothy A. Ryan, 18th District, Coaldale; Wm. R. Bottomley, 21st District, Shenandoah; James Quigley, 22nd District, Centralia; Charles G. Fromme, 19th District, Pottsville. August McDade, formerly in charge of the 7th District, has been tranferred to the 4th District at Scranton. Governor Pinchot will forward the nominations to the Senate just before his administration closes Jan. 18. Secretary Walsh is said to be an active candidate for reappointment by Governor-elect John S. Fisher, but so far the next Governor has not said anything regarding any of his appointments.

Truce in Drainage Case.—By agreement of counsel reached Dec. 1 a settlement of the Indian Creek Valley mine drainage controversy was reached. The mines now operating are to continue, with the understanding that work on the aqueduct system is to be pushed to the utmost. This holds until June 1, 1927. If by that time the tunnels and flumes are not completed all operations are to cease and the mines to be sealed until the order of the state Supreme Court is carried out. Papers necessary to establishing this agreement were being prepared.

Rogers-Brown Iron Co., owner of the Sykesville mine, under the auxiliary name of the Cascade Coal Co., is preparing to rebuild some of the coke ovens there so as to fit them for utilizing byproducts which have always been wasted. The four that are to be saved now are tar, benzol, ammonia and gas. The gas will be used to displace the use of coal about the mine and may be piped to surrounding towns for house fuel. The company also owns a mine at Tyler, where coke is made.

The Corporation Bureau of the Department of State and Finance has approved the merger of the Pine Hill Collieries Co., formerly the Pine Coal Corporation, and the Elkram Coal Co., formerly the Markle Coal Corporation. The merged company is known as the Pine Hill Collieries Co. The company has a capital stock consisting of 30,521 shares of common with a par value of $1 a share, and 25,000 shares of preferred stock at a par of $100 a share. The officers of the company are James Crosby Brown, of Philadelphia, president; G. R. Radford, of Bethlehem, treasurer, and Elmer L. Mack, Bethlehem, secretary.

Operations were resumed Dec. 9, at the Peach Orchard colliery of the Glen Alden Coal Co., at Parsons, after a strike of over a week. The miners walked out following the discharge of Thomas Burke, over violation of the company's anti-smoking rule. The grievance is to be taken up at a conference of company officials and union officers.

Hudson Company Dines Miners.—Several hundred miners and laborers of the Coalbrook colliery of the Hudson Coal Co., were guests at the company's monthly banquet at Casino Hall, Carbondale, on the evening of Dec. 14. A number of addresses on the divers work in which the men are engaged were delivered by men of the colliery. An interesting program of entertainment was enjoyed by all.

Hard-Coal Stripping Started.—Extensive stripping operations have been started on the Hosie Mountain back of Archbald by the Archbald Coal Co., which plans to mine thousands of tons of coal left in higher levels of workings formerly mined by the Temple Coal Co. but which have been leased to the Archbald concern. The Temple Coal Co. is said to have ignored mining the coal in the upper levels due to the fact that tunnel operations were considered impractical. The Archbald company has already placed one big steam shovel at work and has employed a large force of men. A new breaker has been erected at the scene where more than 100 cars of anthracite is already being obtained daily.

Pittsburgh Company Busier.—Pittsburgh Coal Co. established new high records for open-shop operations in both tonnage produced and men at work in the week ended Dec. 11, when 105,812 tons were loaded with an average of 5,037 men at work.

UTAH

Inspectors Absolved of Bond.—The Attorney General's office has ruled that the coal mine inspectors of Utah need not furnish a bond now that they are responsible to the Industrial Commission of the state. Hitherto they have had to furnish a $5,000 bond.

Extensive Development Likely.—It is stated that powerful financial interests are desirous of using Utah coking coal in connection with the establishment of a huge iron and steel industry on the Pacific Coast. It is stated that certain options have already been obtained as the result of tests made by W. H. Taylor and B. L. Cummingham, mining engineers, representing Eastern interests with unlimited resources. The Union Pacific railroad also is believed to be interested in the undertaking. It is admitted, however, that nearly everything depends upon final tests as to the coking qualities of Utah coal. Many coal properties in the state are being

considered. A few years ago the Columbia Steel Corporation was organized in Utah and is using coal obtained from the Book Cliff region of the state, while the Utah Fuel Co. is operating beehive coking ovens on a large scale.

Denies Government Fraud Appeal.—The Supreme Court has sustained the federal District Court of Utah in the government's appeal against the decision to release George A. Storrs and associates, charged with using the mails to defraud in connection with the promotion of the Great Western Coal Mines Co. The indictments were dropped by the District Court because of the presence in the grand jury room of a stenographer and because of statements made to the grand jury by the District Attorney. Storrs is a former warden of the State Prison and before that was indentified with coal mining operations in Carbon County.

Coal Lease Date Announced.—A tract of coal land embracing 1,080 acres in Salina Canyon, Sevier County, will be leased at public auction in Salt Lake City, Jan. 12. Some lively bidding is probable on account of the interest in the general area involved. A royalty of 10c. per ton, mine run, is required by the government and there must be an initial investment of $75,000 during the first three years of the lease. Production of not less than 30,000 tons per year beginning the fourth year, is another stipulation. The Salina Canyon district has been very much in the public eye of late by reason of discussions regarding the construction of a coal railroad through that section.

WEST VIRGINIA

New N. & W. Coal Records.—Two records were broken by the Norfolk & Western Ry. during November. A new record was established for coal loading, when 83,813 cars were loaded, including the Radford division. The best previous record was made in October, when 80,329 cars were loaded. A new mark for dumpings at Lamberts Point also was established, 1,235,520 tons of coal, representing 21,181 cars, being dumped for export. October dumpings totaled 1,159,182 tons, representing 19,774 cars.

The Grafton yards of the Baltimore & Ohio R.R. recently set a new record by sending 1,231 cars of freight east daily.

Lambie Seeks Greater Safety.—With a view to formulating legislation to reduce the hazards of mining in West Virginia, R. M. Lambie, chief of the State Department of Mines, has called a meeting of deputy inspectors to be held at his office in Charleston on Dec. 18. Inspectors will discuss a number of new phases of legislation. It is stated that several amendments to the state mining code will be proposed by the Department of Mines so as to insure greater safety in the operation of the mines of the state. It is possible that the question of compelling oil and gas companies to better equip wells which are drilled through coal mines so as to prevent the escape of gas from the wells into the mines will be considered. Other amendments destined to protect miners against electricity and against haulage accidents will be brought before the inspectors at their meeting in Charleston.

Receiver Named.—Real estate, including large coal holdings, of the Meriden Smokeless Coal Co., operating near Philippi, in Barbour County, was sold last week to satisfy a trust deed by Arthur S. Dayton, trustee. At the same time John F. Brown, of Elkins was appointed receiver by Judge Warren B. Kittle of the Circuit Court of Barbour County to take charge of the remaining assets. The real estate was sold to Mrs. Maude Kaemmerling, of Philadelphia, holder of the deed of trust, for the sum of $459,000. The company had purchased about 6,000 acres from her, paying about $600,000, it is understood. The Meriden company had one of the largest holdings in the Barbour field of northern West Virginia.

The Peck's Run Coal Co., operating in Upshur County, is making extensive repairs at its mines. New gas generators and other improvements are under way. F. E. Williams, of Buckhannon, who owns a large block of stock of the company, is general manager.

Elk River Mines Running.—The Elk River Coal & Lumber Co., which was out of the market for ten days late in November, owing to a washout on its railroad line connecting with the C. & O., is again operating full time, according to C. M. Anderson, manager of the Western sales office at Columbus. The company has installed a dry cleaner which is now in operation.

Island Creek Sets New Record.—The Island Creek Coal Co. produced 628,100 tons of coal in November. This is the largest monthly output in the company's history, comparing with 603,556 tons in October, the previous record month, and 599,700 tons in September.

CANADA

Coal to Engage Parliament.—The Canadian Parliament, which assembled Dec. 9, will be called upon to give a good deal of attention to the coal question. The speech from the throne outlining the work of the session states that measures providing for assistance to works constructed for the production of domestic coke from Canadian coal will be submitted. This is in accordance with the recommendations of the report of the Royal Commission appointed to investigate conditions in the Maritime Provinces, which deals extensively with the coal industry, and recommends the establishment of byproduct coking plants with government assistance at Quebec, Montreal, Ottawa, Toronto, Hamilton, Port Colbourne and London. Other recommendations made by the Commission are that the Advisory Tariff Board be asked to give immediate attention to coal tariffs and the renewal of the government subvention given in 1924 for Nova Scotia coal.

Cumberland Gap and Town of Same Name as Viewed from Tennessee

A monument at the gap marks the corner of three states—Kentucky, Virginia and Tennessee. In the basin on the other side is Middlesboro, Ky. The gap was a point of hot contention during the Civil War. The trail of America's famous scout and Indian fighter Daniel Boone led through this section.

Effort to open a way for the sale of Alberta coal in middle and eastern Ontario continues. The Board of Railway Commissioners has been asked to give an early hearing on the subject at Ottawa, with the idea of granting a rail rate that will compete with American coal. A separate effort to obtain an advance of the coal tariff also is being made. American shippers say that the actual transportation cost of Alberta coal is more than the delivered price of American bituminous coal in Ontario.

A first mortgage bond issue of $1,000,000, secured by a deed of trust on the company's mine and equipment, has been subscribed for by existing shareholders of Corbin Coals, Ltd., which is operating a colliery in the Crow's Nest Pass coal field of British Columbia. The proceeds of the issue will be used to enlarge the washing plant and to provide new railway and other equipment.

Among the Coal Men

Arthur B. Stewart has been elected president of the Davis Coal & Coke Co., with headquarters in the Continental Building, Baltimore, Md. He succeeds A. W. Calloway, who died Sept. 13. The company's sales offices in New York City, Philadelphia and New Haven will be continued.

E. O. Sykes, of Jackson, Miss., has been suggested to President Coolidge by Senator Pat Harrison for appointment to the vacancy in the Federal Trade Commission in the event that the President decides to appoint a Democrat to the post.

James McMillan, of West Frankfort, Ill., has been appointed by Governor Small as director of the Franklin County Mine Rescue station, at Benton, Ill.

L. J. Desabla, a former member of the engineering corps of the Alabama By-Product Corporation, has been appointed superintendent of that company's Praco Mine, in Jefferson County, succeeding F. M. House. C. D. Seigler is now superintendent at Wegra Mine No. 3, filling the vacancy caused by the death of J. A. Jones.

C. J. Neekamp, secretary of the Northeastern Kentucky Coal Operators' Association, with headquarters at Ashland, Ky., has been chosen alternate chairman of the Ohio Valley Shippers' Advisory Board. The election took place recently at the Gibson Hotel, Cincinnati, with about 250 shippers present, including a number of coal men.

Horace Vandeventer, of Knoxville, Tenn., has been recommended to President Coolidge by Senator Tyson, of Tennessee, for the place on the Federal Trade Commission formerly held by Huston Thompson, whose term recently expired.

M. G. Moore, mine foreman at the No. 1 mine of the Lillybrook Coal Co., at Lillybrook, W. Va., has been elected as president of the Lillybrook Mining Institute.

Samuel D. Warriner, president of the Lehigh Coal & Navigation Co. and chairman of the Anthracite Operators' Conference, of Philadelphia, has accepted the invitation of the Chicago Coal Merchants' Association to be its guest and to speak at the twenty-first annual banquet of that organization at Hotel Sherman, Chicago, on Jan. 20. J. C. Tattersall, president of the National Retail Coal Merchants' Association, has already accepted a similar invitation and similar action is expected from **G. H. Merryweather**, president of the American Wholesale Coal Association, and **Walter H. Barnum**, president of the National Coal Association.

L. R. Disney has been appointed general sales manager of the Southern Coal & Coke Co., with headquarters at Cincinnati. He will succeed R. C. Fitzgerald, who has resigned effective Jan. 1. On that date Mr. Fitzgerald will take charge of the sales department of the West Virginia Coal & Coke Co., which was moved to Cincinnati this month from Fairmont, W. Va. He joined the Southern in 1919 after several years of coal experience and was appointed sales manager about two years ago. Mr. Disney started in at the mines of the same company in 1916, worked in the bookkeeping department in Knoxville, Tenn., was assistant transportation manager and made assistant sales manager this year.

Fred Heitzman, of the Old Ben Coal Corporation; **Elmer Wierhake**, of Castner, Curran & Bullitt, and **Robert A. Dickson**, of the Raleigh Coal & Coke Co., were elected directors of the Cincinnati Coal Exchange at the annual election Dec. 16. There were four directors to be elected, however, and it was found that James A. Reilly, of the Queen City Coal Co.; R. P. Gillham, of the Campbell's Creek Coal Co., and W. I. Donnelly, of the Logan & Kanawha Coal Co., were tied. So a method of picking the winner will have to be devised.

Obituary

Granville A. Richardson, chairman of the board of the Pennsylvania Coal Co., Dunmore, Pa.; the Hillside Coal & Iron Co. and other coal concerns, died Dec. 14 at his residence, 181 Upper Mountain Avenue, Montclair, N. J. He was formerly a vice-president of the Erie R.R. The body was taken to Columbus Grove, Ohio, for burial.

John P. Crozer, reputed to have been the largest individual owner of coal properties in Virginia and West Virginia, retired manufacturer, multimillionnaire and philanthropist, dropped dead at his home, at Upland, Pa., last week. He had just returned from a hunting trip in Virginia. He was 69 years old and was born and reared in Upland, a town founded by his grandfather. He retired from the textile manufacturing business three years ago. He was known for his many philanthropies and was the owner of an extensive thoroughbread stock farm at Kingston, Ky. He is survived by his wife; a brother, Edward Crozer, of New York and Philadelphia, and two sisters, Mrs. Caleb Fox, of Ogontz, Pa., prominent golfer, and Mrs. Herman Hilpricht, widow of a noted explorer in Babylonian ruins.

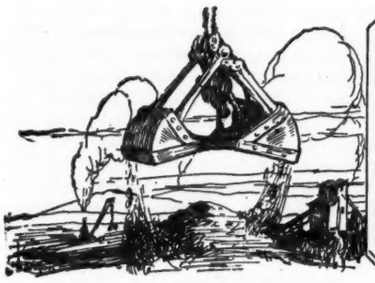
The funeral of **Frank E. Brackett**, father of George S. Brackett, formerly executive vice-president of the Northern West Virginia Coal Association and now with the Consolidation Coal Co., was held at Cumberland, Md., on Dec. 14. Mr. Brackett was not only a civil and a mining engineer of wide reputation but for many years had been general manager of the Maryland Coal Co. in the Georges Creek field of Maryland. Mr. Brackett is survived by his wife, who was a daughter of the late J. Dutton Steele, one of the builders of the Brooklyn Bridge and who was also identified with the early construction of the Baltimore & Ohio. He is also survived by two sons and a daughter. Mr. Brackett was born in Somerville, Mass., and received his degree in civil engineering from Harvard. He was at one time assistant superintendent and later superintendent of the Lehigh Coal & Navigation Co., in the anthracite field of Pennsylvania, before becoming manager of the Maryland Coal Co.

Noel Marshall, Canadian coal shipper best known to the Buffalo trade, died at his home in Toronto on Dec. 9, aged 73. Born in England he came to Toronto with his parents when four years old. He entered the coal trade in 1888, assisting in the establishment of the Standard Fuel Co., one of the largest members of that trade in Canada, and became its president, leaving active management of it to his son, Col. K. R. Marshall, to take an active part in Red Cross work, which he continued till death. His great value to the cause is shown by his being decorated by King George. He was to have been knighted, but the order of the Canadian government forbidding knighting intervened. He was a member of the Buffalo club and often in the city.

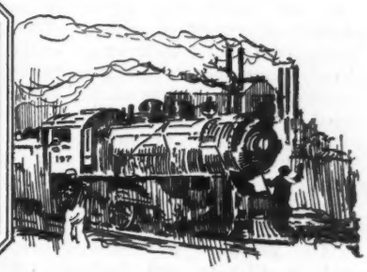
Association Activities

The New River Coal Operators' Association, at its annual meeting, held Dec. 16 at Mt. Hope, W. Va., voiced unalterable opposition to the Parker and Copeland coal control bills, now before Congress. Robert M. Lambie, chief of the West Virginia Department of mines, suggested that a committee of operators be appointed to meet with the deputy mine inspectors of the district once a month to discuss mine accidents of the preceding month in an effort to take steps to eliminate as many accidents as possible in the future. The proposal met with hearty response, and such a committee will be appointed. Holly Stover, of the Stover Smokeless Coal Bureau, and Harry L. Gandy, executive secretary of the National Coal Association, also spoke. All the officers of the association were re-elected. They are M. L. Garvey, general manager, Maryland New River Coal Co., president; Wm. McKell, president, Willis Branch Coal Co., vice-president; P. M. Snyder, vice-president, East Gulf Coal Co., treasurer, and S. C. Higgins, Mt. Hope, secretary.

George Heaps, Jr., of Des Moines, was elected president of the **Iowa Coal Operators' Association** at the recent annual meeting in Des Moines. J. Norwood was elected vice-president, Sam Ballantyne was named secretary and commissioner, and J. B. Ryan, of Colfax, was chosen treasurer. Elected to the executive board were Robert Hunter, of Centerville; F. S. Pfahler, of Gillespie, Ill., and Frank Dole and C. T. Carney, of Des Moines.



Production And the Market



Heavy Production and Usual Holiday Apathy Emphasize Downward Trend of Prices

The combination of heavy production and the customary holiday letdown in ordinary industrial buying is proving too much for the bituminous coal markets of the United States. Spot prices, with very few exceptions, continue to exhibit a marked downward trend which has not been checked by curtailment in production activities at some mines and plans for wholesale closing down over the holidays in entire districts.

A survey of the price situation in Eastern and Southern coals reveals an almost unbroken series of declines. Screenings in the No. 8 field registered a triffling advance, a few tidewater quotations held to the figures of the preceding week, but in other directions offerings were made at sharp reductions. In the Middle Western field the situation was little better. No advances, except on western Kentucky screenings, were reported, but declines were fewer.

Spot Average Again Declines

Coal Age Index of spot bituminous prices was 200 on Dec. 20 and the weighted average price was $2.42. Compared with the preceding week this was a loss of 14 points and 17c. The steady easing off in prices has carried the spot levels back to mid-October ranges, with the possibility of further decreases strong. Any upturns will be the result of weather demand, principally for coal suitable for household use. Stocks on hand and fluid transportation rob midwinter of its old-time terrors when car shortages and low reserves sent spot prices skyrocketing.

Analysis of available distribution data indicates that the country as a whole is in good shape from the standpoint of fuel reserves. Coastwise shipments to New England have been behind those of last year, but ahead of 1924. The increase in all-rail shipments does not equal the difference between 1925 and 1926 waterborne coal, but as an offset to that is the fact that 1925 movement was swelled by bituminous buying to take the place of strike-bound anthracite. The lake trade has been better served in point of tonnage than it was last year and no complaint is heard from the run of inland markets.

Exports in Last Spurt?

Up to Nov. 30 tidewater exports were 18,743,842 net tons, as compared with 4,816,398 tons last year, 4,359,752 tons in 1924 and 4,830,802 tons in 1923. Few new charters are reported—particularly at the Northern ports. Nevertheless in the rush to fill outstanding orders, during the week ended last Thursday there were 64 cargoes loaded for foreign destinations at Hampton Roads, 55 cleared from Baltimore and 21 from Philadelphia. Of this total, 78 vessels were destined to the United Kingdom.

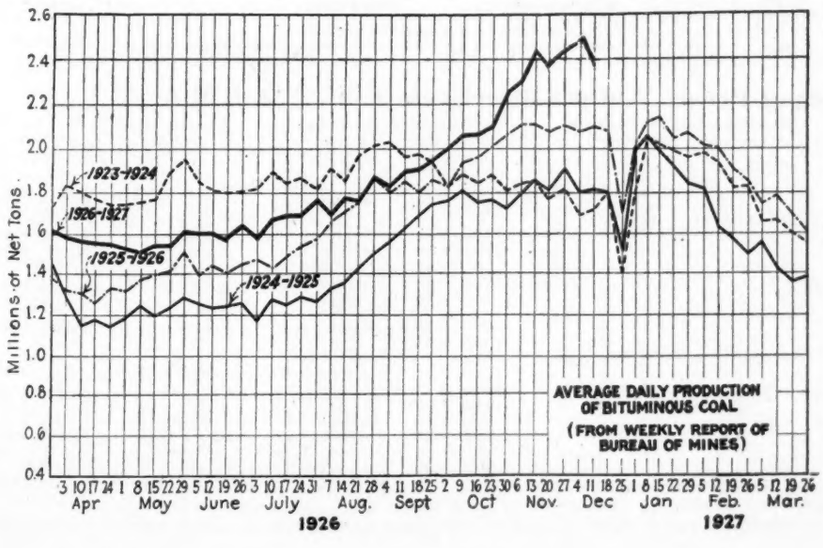
Bituminous production during the week ended Dec. 11 dropped to 14,122,000 net tons, according to preliminary estimates of the U. S. Bureau of Mines. This was a decrease of 554,000 tons when compared to the revised estimate of 14,676,000 tons for the preceding week. The cumulative total to Dec. 11 was 544,302,000 tons, as compared with 534,752,000 tons the corresponding period in 1920 and 536,369,000 tons in 1923. Unless there is a very sharp drop in output, 1926 will rank the second highest in the history of the industry.

Anthracite Marks Time

On the domestic side, the anthracite demand is controlled by the weather man. Stocks already accumulated by forehanded consumers are so heavy, however, that the mercury is less potent than in former years and independent quotations on the larger sizes actually weakened last week. The steam market, on the other hand, was somewhat stronger in New York, but little changed in Philadelphia. Total output the week ended Dec. 11 dropped to 1,808,000 net tons. Lake movement has been suspended, but there were 54,424 tons of cargo and 2,117 tons of bituminous vessel coal loaded at the Lake Erie ports during the week ended Dec. 19.

In the beehive coke market interest centers upon the question of prices for first quarter contracts. Neither buyer nor seller appear to be near agreement on this question, which is complicated by the wage situation. Current output in the Connellsville region is declining.

Zero weather came to the rescue of Illinois and Indiana operators last week



Estimates of Production

(Net Tons)

BITUMINOUS

	1925	1926
Nov. 27	11,599,000	13,413,000
Dec. 4 (a)	12,868,000	14,676,000
Dec. 11 (b)	12,908,000	14,122,000
Daily average	2,151,000	2,354,000
Cal. yr. to date	491,561,000	544,302,000
Daily av. to date (c)	1,687,000	1,867,000

ANTHRACITE

Nov. 27	36,000	1,638,000
Dec. 4	63,000	1,997,000
Dec. 11 (b)	64,000	1,808,000
Cal. yr. to date (c)	61,601,000	80,582,000

BEEHIVE COKE

Nov. 27	292,000	198,000
Dec. 4 (a)	298,000	191,000
Dec. 11 (b)	288,000	184,000
Cal. yr. to date (c)	9,901,000	11,017,000

(a) Revised since last report. (b) Subject to revision. (c) Adjusted to equalize number of days in the two years.

and bit deeply into accumulating "no-bills" of prepared sizes. The stimulated demand for domestic coals, however, increased the surplus tonnage of screenings and prices on the latter wobbled. On the domestic side leading southern Illinois operators held to the $4 quotation on 6-in. lump and furnace egg, but prices from other districts in the Middle Western states were less firm.

The greatest weakness, however, is not in Illinois and Indiana offerings but in coals from Kentucky and West Virginia. Good western Kentucky block and lump were seeking a market at $2.25@$2.50; some distress block from West Virginia sold as low as $2.25 and orders for shipment were accepted at $2.50@$2.75. Eastern Kentucky factors quoted $2.75@$3.25. In the Chicago market there was a strong call for anthracite and domestic coke.

Working time in southern Illinois has been cut to two to four days a week at shaft mines which have no railroad orders to round out their tonnage. Stripping pits are doing better on running time, but even those mines have been bothered with "no bills." The advent of colder weather rescued the Duquoin-Jackson County district from a slump and brought working time to four to five days.

Railroads Save Mt. Olive

Railroad orders still are the mainstay of the Mt. Olive group. Some of the congestion of unbilled loads has been reduced by improved movement of domestic sizes. The Standard district is suffering from its recent overexpansion. Many mines have been blocked by "no bills" and others have been down to two days a week, although buying has been heavier during the last few days and prices are less uneven.

The drop in temperature came at an opportune time to the St. Louis market. The increased demand which followed cut into retail stocks, saved many cars from demurrage and brought about a number of restocking orders. Buying favors the medium and cheaper grades and the low prices on western Kentucky has restored some of that field's popularity. Country retail demand, which has been slow, is beginning to show more signs of life. Local wagon steam trade is fairly active at St. Louis, but there is little storing going on. Carload steam business also is fair.

Kentucky Hopes for Change

Kentucky producers are hoping that the severe weather will check the downward movement in prices which has been continuing since the middle of November. Many of the mines have reduced running time, but there are hundreds of "no bills" still clogging up the mine transportation facilities. Most of the eastern Kentucky operators have decided to maintain the November increases in wage rates until spring. In the western part of the

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	Dec. 21, 1925	Dec. 6, 1926	Dec. 13, 1926	Dec. 20, 1926†
Smokeless lump	Columbus	$3.50	$4.75	$4.00	*$3.50@$4.00*
Smokeless mine run	Columbus	2.75	3.50	3.10	*2.75@ 3.25*
Smokeless screenings	Columbus	2.60	2.35	2.50	*2.00@ 2.50*
Smokeless lump	Chicago	3.10	4.50	3.85	*3.50@ 4.00*
Smokeless mine run	Chicago	2.15	3.05	3.00	*2.50@ 3.00*
Smokeless lump	Cincinnati	3.60	4.85	4.60	*3.25@ 4.00*
Smokeless mine run	Cincinnati	2.35	3.50	3.25	*2.25@ 2.50*
Smokeless screenings	Cincinnati	1.85	3.10	2.85	*1.75@ 2.00*
*Smokeless mine run	Boston	5.00	7.00	6.00	*5.15@ 5.50*
Clearfield mine run	Boston	2.00	2.75	2.65	*2.35@ 2.90*
Cambria mine run	Boston	2.30	3.25	2.95	2.65@ 3.25
Somerset mine run	Boston	2.10	3.00	2.80	*2.50@ 3.00*
Pool 1 (Navy Standard)	New York	2.95	3.85	3.85	*3.50@ 3.90*
Pool 1 (Navy Standard)	Philadelphia	2.95	3.45	3.55	3.45@ 3.65
Pool 1 (Navy Standard)	Baltimore	2.20	3.75	3.25	3.00@ 3.50
Pool 9 (Super. Low Vol.)	New York	2.30	2.85	2.85	*2.50@ 2.75*
Pool 9 (Super. Low Vol.)	Philadelphia	2.30	3.15	3.10	3.00@ 3.25
Pool 9 (Super. Low Vol.)	Baltimore	2.00	3.35	2.85	2.75@ 3.00
Pool 10 (H.Gr.Low Vol.)	New York	2.10	2.55	2.60	*2.25@ 2.50*
Pool 10 (H.Gr.Low Vol.)	Philadelphia	2.05	2.85	2.95	*2.45@ 2.70*
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.90	2.65	2.50	2.35@ 2.65
Pool 11 (Low Vol.)	New York	1.75	2.40	2.40	*2.00@ 2.25*
Pool 11 (Low Vol.)	Philadelphia	1.90	2.60	2.65	*2.30@ 2.45*
Pool 11 (Low Vol.)	Baltimore	1.65	2.40	2.15	2.10@ 2.25
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.60	2.25	2.00	*1.65@ 2.00*
Pool 54-64 (Gas and St.)	Philadelphia	1.60	2.45	2.20	*2.00@ 2.25*
Pool 54-64 (Gas and St.)	Baltimore	1.65	2.85	1.95	1.90@ 2.00
Pittsburgh sc'd gas	Pittsburgh	2.65	2.70	2.65	*2.50@ 2.75*
Pittsburgh gas mine run	Pittsburgh	2.10	2.30	2.30	*2.15@ 2.30*
Pittsburgh mine run (St.)	Pittsburgh	2.05	2.20	2.10	2.00@ 2.25
Pittsburgh slack (Gas)	Pittsburgh	1.55	1.95	1.95	*1.65@ 1.80*
Kanawha lump	Columbus	2.25	3.25	3.25	*2.25@ 2.50*
Kanawha mine run	Columbus	1.70	2.10	2.10	*1.90@ 2.25*
Kanawha screenings	Columbus	1.20	1.60	1.60	*1.25@ 1.50*
W. Va. lump	Cincinnati	2.75	3.35	2.60	*2.00@ 2.75*
W. Va. gas mine run	Cincinnati	1.65	2.60	2.50	*1.75@ 2.00*
W. Va. steam mine run	Cincinnati	1.55	2.25	2.25	*1.50@ 2.00*
W. Va. screenings	Cincinnati	1.15	1.80	1.75	*1.25@ 1.75*
Hocking lump	Columbus	2.35	3.25	3.00	*2.75@ 3.00*
Hocking mine run	Columbus	1.85	2.10	2.05	1.90@ 2.25
Hocking screenings	Columbus	1.25	1.85	1.70	*1.50@ 1.75*
Pitts. No. 8 lump	Cleveland	2.35	2.85	2.70	*2.05@ 3.00*
Pitts. No. 8 mine run	Cleveland	1.85	2.00	2.00	*1.90@ 2.00*
Pitts. No. 8 screenings	Cleveland	1.45	1.60	1.55	**1.60@ 1.70**

Midwest	Market Quoted	Dec. 21, 1925	Dec. 6, 1926	Dec. 13, 1926	Dec. 20, 1926†
Franklin, Ill. lump	Chicago	$3.35	$4.00	$4.00	$4.00
Franklin, Ill. mine run	Chicago	2.50	2.85	2.85	*2.50@ 2.75*
Franklin, Ill. screenings	Chicago	1.85	1.75	1.75	1.50@ 2.00
Central, Ill. lump	Chicago	2.85	3.50	3.25	*2.50@ 3.00*
Central, Ill. mine run	Chicago	2.30	2.60	2.10	2.00@ 2.25
Central, Ill. screenings	Chicago	1.40	1.50	1.50	*1.25@ 1.50*
Ind. 4th Vein lump	Chicago	3.00	4.00	4.00	4.00
Ind. 4th Vein mine run	Chicago	2.30	2.60	2.60	*2.25@ 2.50*
Ind. 4th Vein screenings	Chicago	1.85	1.85	1.85	1.75@ 2.00
Ind. 5th Vein lump	Chicago	2.50	3.35	3.00	2.75@ 3.25
Ind. 5th Vein mine run	Chicago	1.95	2.35	2.20	*2.10@ 2.25*
Ind. 5th Vein screenings	Chicago	1.40	1.50	1.40	1.35@ 1.50
Mt. Olive lump	St. Louis	2.85	3.10	2.85	2.75@ 3.00
Mt. Olive mine run	St. Louis	2.00	2.75	2.50	2.50
Mt. Olive screenings	St. Louis	1.75	1.60	1.50	1.50
Standard lump	St. Louis	2.40	2.85	2.35	2.25@ 2.50
Standard mine run	St. Louis	1.80	1.85	1.85	1.75@ 2.00
Standard screenings	St. Louis	.85	1.05	1.05	1.00@ 1.15
West Ky. block	Louisville	2.00	3.10	3.00	*2.50@ 2.75*
West Ky. mine run	Louisville	1.35	1.60	1.60	*1.25@ 1.75*
West Ky. screenings	Louisville	.95	1.15	1.15	**1.10@ 1.40**
West Ky. block	Chicago	2.00	3.10	2.75	*2.25@ 2.75*
West Ky. mine run	Chicago	1.25	1.85	1.85	1.75@ 2.00
South and Southwest					
Big Seam lump	Birmingham	2.75	2.85	2.85	2.75@ 3.00
Big Seam mine run	Birmingham	2.10	2.10	2.10	*1.75@ 2.00*
Big Seam (washed)	Birmingham	2.30	2.25	2.25	*2.00@ 2.25*
S. E Ky. block	Chicago	3.10	3.50	3.25	*2.75@ 3.25*
S. E. Ky. mine run	Chicago	2.15	2.60	2.60	*2.00@ 2.25*
S. E. Ky. block	Louisville	3.00	3.60	3.25	*2.75@ 3.25*
S. E. Ky. mine run	Louisville	1.60	2.25	2.10	*1.75@ 2.25*
S. E. Ky. screenings	Louisville	1.10	1.75	1.75	*1.50@ 1.75*
S. E. Ky. block	Cincinnati	2.85	3.50	3.50	*2.25@ 3.00*
S. E. Ky. mine run	Cincinnati	1.60	2.25	2.25	*1.50@ 1.90*
S. E. Ky. screenings	Cincinnati	1.15	1.70	1.65	*1.25@ 1.75*
Kansas lump	Kansas City	5.00	4.60	4.60	4.50@ 4.70
Kansas mine run	Kansas City	3.10	3.00	3.00	3.00
Kansas screenings	Kansas City	2.30	2.30	2.30	2.25@ 2.35

* Gross tons, f.o.b. vessel, Hampton Roads
† Advances over previous week shown in **heavy type**; declines in *italics*

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	December 14, 1925 Independent	December 14, 1925 Company	December 13, 1926 Independent	December 13, 1926 Company	December 20, 1926† Independent	December 20, 1926† Company
Broken	New York	$2.34	.....	‡	.....	$8.50@$9.25	.....	$8.50@$9.25
Broken	Philadelphia	2.39	‡	‡	$9.25	8.50@ 9.15	$9.25	8.50@ 9.15
Egg	New York	2.34	‡	‡	8.25@ 9.25	8.75@ 9.25	*8.25@ 9.00*	8.75@ 9.25
Egg	Philadelphia	2.39	‡	‡	9.00@ 9.50	9.00@ 9.15	*8.50@ 9.50*	9.00@ 9.15
Egg	Chicago*	5.06	$9.50@10.00	$8.03@$8.25	8.26	8.13	8.26	8.13
Stove	New York	2.34	‡	‡	9.25@10.00	9.25@ 9.50	*9.25@ 9.75*	9.25@ 9.50
Stove	Philadelphia	2.39	‡	‡	9.75@10.20	9.35@ 9.50	*9.40@10.25*	9.35@ 9.50
Stove	Chicago*	5.06	10.00@11.00	8.48@ 8.80	8.71	8.58	8.71	8.58
Chestnut	New York	2.34	‡	‡	9.25@ 9.75	8.75@ 9.15	9.25@ 9.50	8.75@ 9.15
Chestnut	Philadelphia	2.39	‡	‡	9.25@10.00	9.00@ 9.15	*9.15@ 9.75*	9.00@ 9.15
Chestnut	Chicago*	5.06	10.00@11.00	8.50@ 8.75	8.48	8.53	8.48	8.53
Pea	New York	2.22	‡	‡	6.00@ 6.50	6.00@ 6.50	6.00@ 6.50	6.00@ 6.50
Pea	Philadelphia	2.14	‡	‡	6.30@ 6.75	6.50	*6.00@ 6.75*	6.50
Pea	Chicago*	4.79	5.50@ 6.00	5.50@ 6.00	6.03	6.10	6.03	6.10
Buckwheat No. 1	New York	2.22	‡	‡	2.25@ 2.50	2.50@ 3.50	**2.50@ 2.75**	2.50@ 3.50
Buckwheat No. 1	Philadelphia	2.14	‡	2.50@ 3.00	2.40@ 2.75	2.50@ 3.00	*2.20@ 2.75*	2.50@ 3.00
Rice	New York	2.22	‡	‡	1.65@ 2.10	2.00@ 2.25	**1.70@ 2.10**	2.00@ 2.25
Rice	Philadelphia	2.14	‡	‡	1.90@ 2.00	1.75@ 2.25	1.90@ 2.00	1.75@ 2.25
Barley	New York	2.22	‡	‡	1.35@ 1.50	1.50@ 1.75	*1.25@ 1.50*	1.50@ 1.75
Barley	Philadelphia	2.14	‡	‡	1.75	1.50@ 1.75	1.75	1.50@ 1.75
Birdseye	New York	2.22	‡	‡	1.40@ 1.60	2.00	*1.25@ 1.50*	2.00

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.
‡ Quotations withdrawn because of strike which started Sept. 1, 1925.

state, the labor situation is reported excellent.

Western Kentucky operators are asking $2.50@$2.75 for 6-in. coal. Screenings have improved slightly because demand for prepared coal has been so slow. Quotations, however, cover a wide range, with most of the coal moving at $1.25@$1.75. A little eastern Kentucky block is bringing $3.50, but most of the tonnage is going at $2.75@$3.25. Slack is $1.50@$1.75.

Demand from all classes of consumers has been unusually active in the Northwest. Dock operators at the Head of the Lakes now believe that December shipments will exceed the totals of last month. Much gratification is expressed over the recent gains in movement to the Twin Cities and southern parts of dock territory, where competition with all-rail shipments from Illinois and Indiana is keen. Retailers are placing many rush orders.

Smokeless Supplies Short

A close check is being kept on the movement of smokeless grades as dock supplies have been greatly depleted. Prices are firmly held on all varieties of coal. Pocahontas prepared is $9.50; mine-run, $6.50 and screenings, $5. The last-named figure also applies to bituminous screenings. New bookings of domestic coke have been light because the supplies of the local ovens have been drawn upon heavily for gas-making.

The lake shipping season came to a close on Dec. 14, as far as the docks at the Head of the Lakes were concerned, with the arrival of three cargoes. During the final week of unloading, 22 steamers, including three with anthracite, were discharged.

Weather demands have kept the domestic end of the business at Twin Cities working at top speed. Householders press retailers for immediate deliveries and the retailers are placing additional orders with the docks and the mines. Milwaukee is settling down to a normal winter basis. The docks are carrying the average amounts of anthracite and bituminous coal and the general outlook is considered satisfactory.

Southwestern Demand Stimulated

A sudden drop in temperatures the middle of December found Kansas City retail yards well stocked with fuel and a large accumulation of "no bills" at the Southwestern mines. Retailers reported a rush of orders, but the wholesale trade had only a moderate revival. Climatic conditions also came to the aid of the Colorado mines and reduced the number of "no bills" from approximately 500 cars to 350 in one week. Mines are running 60 per cent of full working time. Snowstorms and freezing temperatures created the heaviest demand of the season for slack from the Utah mines. Larger sizes also moved more freely and orders were received from a wider territory.

Cincinnati factors are waiting hopefully to see what effect the general closing down of West Virginia and eastern Kentucky mines over the holidays will have upon the market. The deflation process which set in with the end of the British strike has carried spot quotations steadily downward and created a price situation in which there is wide divergence of opinion as to actual going figures.

Last week some high-volatile slack was sold at $1.75, while other coal equally as good went begging at $1.25. Reductions by one of the leading interests in the Logan field to $2.75 for 6-in. lump, $2.50 for 3-in. and $2.25 for egg brought quotations from other shippers down to $1.75@$2.25. All high-volatile districts are suffering from the consignment shipments which have appeared as the aftermath of the recent high production.

Smokeless Market Breaks

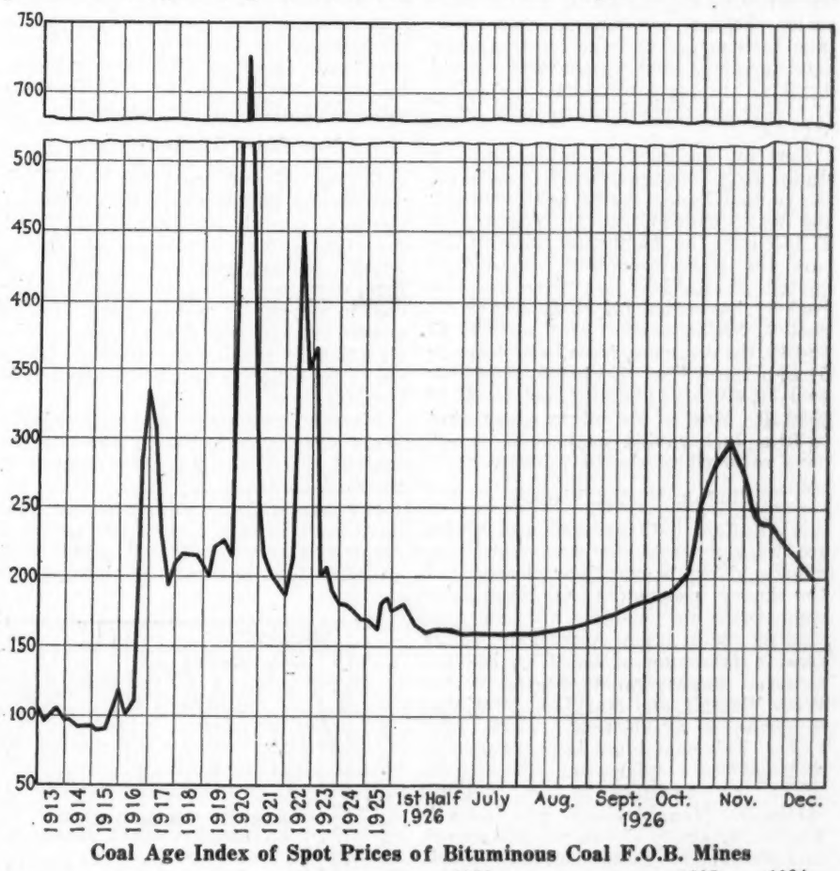
Slowing down in demand and the attempt to find an Eastern market for the coal on wheels between the mines and the tidewater piers have forced the smokeless shippers to abandon their December circulars. Most of the Pocahontas producers seeking Western outlets now have undercut the quotations made by their New River competitors earlier in the month. Lump and egg have been offered at $3.25@$4 and min-run around $2.50.

During the week ended last Saturday the number of coal loads interchanged through the Cincinnati gateway dropped to 12,918—a decrease of 103 when compared with the preceding week and 904 when compared with the corresponding period last year. Movement of empties to the mines, however, was heavier. The total was 14,404 cars, as compared with 15,541 cars the preceding week. Movement to the Louisville & Nashville increased 1,873 cars, but returns to the Cheasapeake & Ohio declined 176 and to the Southern Ry., 179 cars.

Weakness in prices still continues in the southern Ohio field, but the letdown now is more gradual, although many buyers are clinging to their policy of withholding orders to force further reductions. Retail stocks appear ample to carry the yards over the holiday period with little or no additional buying. Steam trade is at a standstill because stocks are large and many plants are taking inventory. Industries compelled to enter the spot market can pick up distress tonnage. Output has declined to 35 to 40 per cent of capacity.

Northern Ohio Quieter

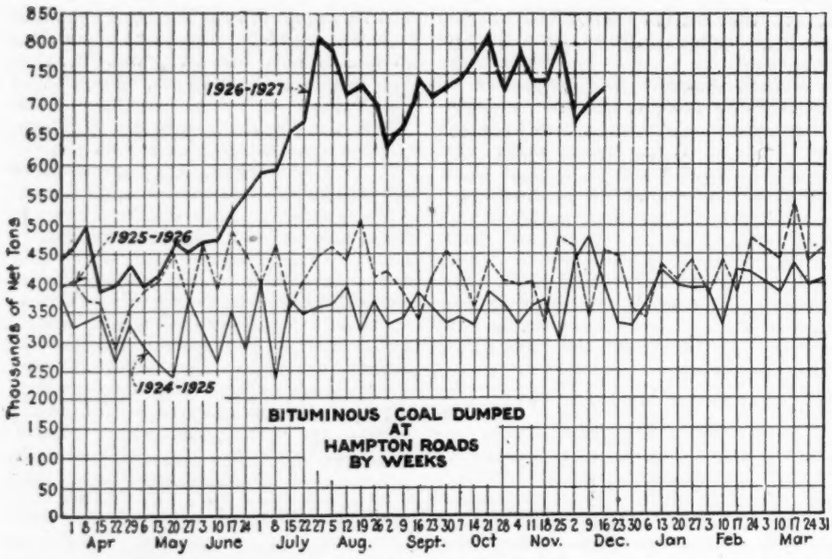
The past week saw a slight stiffening in slack prices in the No. 8 field, but quotations on lump and mine-run again were weaker. Most industrial buyers are trying to reduce inventories before the first of the year. The retail trade also is marking time, although a continuance of severe weather will change this condition. During the week ended Dec. 11 the output of the No. 8 field



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1926				1925	1924
	Dec. 20	Dec. 13	Dec. 6	Nov. 29	Dec. 21	Dec. 22
Index	200	214	236	239	179	170
Weighted average price	$2.42	$2.59	$2.72	$2.89	$2.17	$2.06

This diagram shows the relative, not the actual, price on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportion each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Price of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.



was 361,000 tons, or approximately 50 per cent of capacity.

Pittsburgh district prices sagged another dime last week. The one exception was steam mine-run, which had been hit the week preceding. Production is being squeezed down in this area. The wage situation still is the subject of much talk, but little action. Open shop mines in the Pittsburgh distric show no disposition to reduce their scales before non-union competitors take such action and the latter appear determined to hold up the levels until April 1. Steam slack has dropped to $1.45@$1.55; three-quarter lump, $2.25 @$2.50.

Further declines in prices and a slight drop in production characterize the central Pennsylvania field. During the week ended Dec. 11 output was 21,444 cars, as compared with 21,798 cars the week preceding. Pool 1 is quoted at $2.75@$3, a drop of 75c. Pool 71 has eased off to $2.65@$2.75; pool 9, $2.55@$2 65. In pools 10, 11 and 18, the decreases have been between 5 and 15c. Pool 10 is $2.35@$2.50; pool 11, $2.25@$2.30 and pool 18, $2.10 @$2.20. Most of the mines which went to the Jacksonville scale last month have reverted to the 1917 basis.

Buffalo Market Weaker

At Buffalo both demand and prices are weaker. Possibly the actual tonnage sold has shown little change, but the heavy production has sharpened competition for business. In the low-volatile field lump quotations range from a minimum of $3.25 on Indiana County. Pennsylvania, to $4.50 for West Virginia and Maryland offerings; mine-run is $2.50@$3.25; slack, $2@ $2.25. Fairmont lump is unchanged at $2.25@$2.50; mine-run, $1.75@$2; slack at $1.60@$1.80 is slightly stronger. Youghiogheny gas lump is $3@$3.25; slack, $1.75@$2; Pittsburgh and No. 8 steam lump, $2@$2.25; slack, $1.50@$1.75.

The pressure of heavy production is having its effect in New England territory. Navy Standard coals are lower at Hampton Roads and an early slump in on car quotations at Boston is forecast. Spot inquiry is extremely light. Offerings of coastwise tonnage are so heavy that even the highest grades of all-rail central Pennsylvania coal can find little market. In other words, the trade is slipping back into the rut of last summer, when prices were at a minimum and buyers apathetic.

Smokeless was down to $5.25 gross, f.o.b. piers, with some small lots sold at $5.50. On cars at Boston and Providence coal was quoted for inland delivery at $7@$7.50, but only the smaller consumers can be persuaded to take on tonnage at those figures. Larger consumers feel that a $6.50 basis would be more nearly in line with current quotations at Hampton Roads.

New York Market Steady

Buying of soft coal at New York was steady last week. The volume of tonnage moved was substantial, but free coal prices were dictated by the buyers. The tidewater situation is firm, despite the fact that most of the coal is moving on consignment. Large consumers are taking advantage of the situation by picking up offerings wherever the seller is ready to make concessions.

Medium low-volatile and high-volatile coals are hardest hit in the waning market at Philadelphia. Producers with railroad contracts are upset over the many cancellations from buyers who have been insisting upon 100 per cent shipments and complaint is made that railroad fuel agents are shutting off contract deliveries and buying up free distress coal. Colder weather caused some increase in general industrial buying, but the disposition to stay out of the market to break prices still is general.

Tidewater business is slowly simmering down to normal. The number of cargoes loading for foreign destinations is diminishing. At the present time it looks as if most of the export business will be transferred to the Southern piers after present unfilled charter engagements have been discharged. Bunker trade continues active.

Baltimore Export Trade Fading

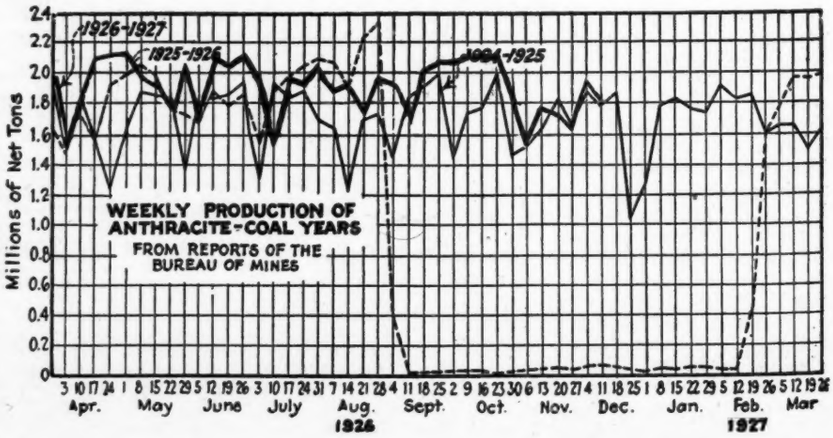
Practically all the export business moving out of Baltimore at the present time is on old commitments. Few new charters have been reported and many old ones have been canceled or transferred. Domestic industrial demand is light. Industries for the most part are playing the spot market or are buying on short-term orders. Except for a few specialized coals, offerings are liberal.

The Birmingham market has been quiet and easy the past week. Spot inquiry has been light. Railroads and public utilities are stocking coal, but industries generally are holding off until after the holiday period. Quotations on the lower and medium steam grades are softer. Big steam mine-run has dropped to $1.75@$2 and washed to $2.@$2.25. Carbon Hill mine-run is $2.@$2.25; washed, $2.25@$2.50; Cahaba mine-run, $2.50@$2.75; washed, $2.50@$3; Black Creek washed, $3@ $3.50; Pratt mine-run and washed, $2.25@$2.50; Corona mine-run, $2.75; washed, $3.

In the domestic trade, which has been only semi-active, shippers expect a revival because of weather conditions. Retail stocks are not large and any real cold wave would soon send the retailers scurrying for additional tonnage. It is estimated that Alabama production this year will be between 20,500,000 and 20,750,000 tons.

Steam Sizes More Active

Activity in steam sizes featured last week's anthracite market at New York. Independent quotations responded promptly to the stimulus of heavier buying and two of the larger individual shippers advanced prices on No. 1 buckwheat 25c. Company domestic sizes



Car Loadings and Supply

	Cars Loaded	
	All Cars	Coal Cars
Week ended Dec. 4, 1926..	1,058,151	251,626
Week ended Nov. 27, 1926..	942,792	227,936
Week ended Dec. 5, 1925..	1,020,873	191,821
Week ended Nov. 26, 1925..	923,213	172,279

	Surplus Cars		Car Shortages	
	All Cars	Coal Cars	All Cars	Coal Cars
Nov. 30, 1926	144,921	12,521		No report
Nov. 23, 1926	115,734	8,722	.....	No report
Nov. 30, 1925	136,796	43,658	.....	.....

moved steadily, but demand for independent coals was slower and prices were weaker. Odd lots of independent stove were quoted as low as $9.15. Egg still lags, but general demand for chestnut is almost on a par with that enjoyed by stove.

Seasonable weather has had little effect upon the hard coal market at Philadelphia. As a matter of fact, cancellations by retailers have been common. The bulk of the business is in the hands of the company shippers and even these producers have been compelled to work hard to keep their output moving. Stove has yielded first place to nut, but both sizes are losing strength. Egg is extremely draggy and pea little better. Aside from No. 1 buckwheat, the steam trade holds up fairly well.

Domestic demand at Baltimore fluctuates with the thermometer. Buffalo, on the other hand, has had cold weather, but has been denied the normal consumer reaction. During the past week there was some independent anthracite on track and company shippers had to fight for business.

Contract Prices Uncertain

Interest in the Connellsville coke market centers on contract prices for first quarter deliveries. Prior to the wage advance of several weeks ago one oven closed business at $3.65@$3.75, with a proviso authorizing increases to take care of upward readjustments in wages. This range, however, is more than the furnaces now are willing to pay in view of existing demand for pig iron. Operators are resisting pressure to restore old wage rates and assert no change will be effective before the first of the year and promise nothing definite at that time.

The spot market is colorless. Production has been closely curtailed so that there is no surplus of unsold tonnage seeking a buyer. Spot furnace is $3.50@$3.75; foundry, $4.75@$5.25. Beehive output in the Connellsville and Lower Connellsville region during the week ended Dec. 11 was 125,990 tons, according to the Connellsville *Courier*. Furnace-oven output was 54,600 tons, a decrease of 10,900 tons when compared with the preceding week. Merchant-oven production was 71,390 tons, a decrease of 1,760 tons.

Polish Coal Industry Benefits From British Strike

The permanent gain in Polish coal exports as a result of the British strike is estimated in Poland to be approximately 500,000 metric tons, according to cable advices from Warsaw. Most of that gain results from increased shipments to Scandinavian countries, the Baltic States and to Italy, it is said.

Polish coal production in September and October was 3,781,000 and 3,022,000 metric tons respectively. Exports during the same months were 1,988,000 and 1,273,000 metric tons respectively. Coal stocks at the end of September were 978,000 metric tons; at the end of October, 1,227,000 tons.

Marked Shift in Output Ratio of Coal Used To Make Byproduct Coke

The following tables present a summary of the replies of operators as to the origin of the coal used in the manufacture of byproduct coke in 1924 and 1925. Pennsylvania is the largest contributor, followed by West Virginia and Kentucky in the order named. In the ten-year period from 1916 to 1925 inclusive, Pennsylvania's ratio to the total consumed increased from 32 to 41 per cent, chiefly because of the installation of byproduct ovens in the Pittsburgh and Ohio districts; West Virginia's contribution dropped from 42 to 26 per cent, and Kentucky's share increased from 10 to 15 per cent. Virginia, which in 1916 furnished no coal for byproduct coking, now supplies between 1 and 2 per cent of the total. A small quantity of Illinois and Indiana coal is coked in byproduct ovens. In 1923 the tonnage of Illinois coal used was 1,246,000, and of Indiana coal 721,000. In 1924 and 1925, however, low mine prices in the Middle Appalachians acted to diminish the quantity of Illinois coal taken for this purpose.

Coal Used in Manufacture of Byproduct Coke, 1924-25, by Sources

(In Thousands of Net Tons)

State in Which Coal Was Used	Coal Produced In: Alabama	Colorado	Georgia	Illinois	Indiana	Kentucky	Maryland	Ohio	Pennsylvania	Tennessee	Utah	Virginia	Washington	West Virginia	Undistributed	Total
1924																
Alabama	6,381	...	..	...	...	.....	..	...	.....	..	...	...	..	.....	...	6,381
Colorado	.....	860	..	...	...	.....	..	...	.....	..	...	...	..	.....	...	860
Illinois	.....	...	..	481	...	1,533	..	20	100	..	...	...	..	1,146	...	3,280
Indiana	.....	...	..	243	1	1,423	..	...	261	..	...	...	..	3,900	...	5,828
Maryland	.....	...	..	...	...	.....	..	...	1,104	..	...	...	..	.....	...	1,104
Massachusetts	.....	...	..	...	...	3	..	...	.....	..	...	225	..	347	...	575
Michigan	.....	...	..	...	...	1,906	..	...	167	..	...	...	..	332	...	2,405
Minnesota	.....	...	..	...	...	93	..	...	313	..	...	...	..	339	...	745
New Jersey	.....	...	..	...	...	.....	..	...	.....	..	...	553	..	649	...	1,202
New York	.....	...	..	...	...	382	..	...	1,542	..	...	...	..	341	...	2,265
Ohio	.....	...	..	...	...	2,179	..	111	4,730	..	...	...	..	1,276	...	8,296
Pennsylvania	.....	...	..	...	...	.....	..	...	12,104	..	...	...	..	451	...	12,555
Tennessee	.....	...	21	...	...	.....	..	...	.....	60	...	...	..	.....	22	103
Utah	.....	...	..	...	...	.....	..	...	.....	..	190	...	..	.....	...	190
Washington	.....	...	..	...	...	.....	..	...	.....	..	...	...	71	.....	...	71
West Virginia	.....	...	..	...	...	39	..	...	1,339	..	...	...	..	107	...	1,485
Ky., Mo., R. I. and Wisc.	.....	...	..	...	...	437	..	...	65	..	...	205	..	810	2	1,519
	6,381	860	21	724	1	7,995	..	131	21,725	60	190	983	71	9,698	24	48,864
1925																
Alabama	6,867	...	..	...	...	.....	..	...	.....	..	...	...	..	.....	...	6,867
Colorado	.....	795	..	...	...	.....	..	...	.....	..	...	...	..	.....	...	795
Illinois	.....	...	..	325	(a)	1,925	..	...	36	..	...	41	..	1,972	...	4,299
Indiana	.....	...	..	...	...	1,923	..	...	157	..	...	...	..	4,787	...	6,867
Maryland	.....	...	..	...	...	.....	..	...	650	..	...	...	..	733	...	1,383
Massachusetts	.....	...	..	...	...	.....	..	...	.....	..	...	...	..	289	509	798
Michigan	.....	...	..	...	...	1,025	..	...	.....	..	...	...	..	1,429	...	2,454
Minnesota	.....	...	..	...	...	205	..	...	247	..	...	...	..	340	...	792
New Jersey	.....	...	..	...	...	.....	..	...	.....	..	...	540	..	702	...	1,242
New York	.....	...	..	...	...	406	..	...	2,142	..	...	...	..	625	...	3,173
Ohio	.....	...	..	...	...	2,560	..	19	5,446	..	...	...	..	2,248	...	10,273
Pennsylvania	.....	...	..	...	...	.....	43	...	13,795	..	...	...	..	842	...	14,680
Tennessee	.....	...	23	...	...	.....	..	...	.....	99	...	...	..	.....	4	126
Utah	.....	...	..	...	...	.....	..	...	.....	..	328	...	..	.....	...	328
Washington	.....	...	..	...	...	.....	..	...	.....	..	...	...	69	.....	...	69
West Virginia	.....	...	..	...	...	102	..	...	1,313	..	...	...	..	111	...	1,526
Ky., Mo., R. I. and Wisc.	.....	...	..	...	...	736	...	...	40	..	...	218	..	1,013	1	2,008
	6,867	795	23	325	(a)	8,882	43	19	23,826	99	328	799	69	15,091	514	57,680

(a) Less than 100 tons. Statistics by U. S. Bureau of Mines.

Foreign Market And Export News

British Coal Industry Working Back to Normal

Readjustment of the British coal situation is well under way but unsettled conditions are still prevailing generally with price levels not yet stabilized. Local transport and other difficulties are yet to be adjusted.

Coal production in some districts is above prestrike tonnage and is also tending above current demands as hand to mouth buying by domestic consumers continues. Foreign buyers show hesitancy in placing contracts in view of the uncertainty of prices. Prices are materially lower for both inland and export business but further reductions are awaited.

November imports were 3,460,921 gross tons with some shipments still arriving. Production for the week ended Dec. 4, was 3,226,100 tons, with 730,000 miners working. The total output during the week referred to in ten inland districts was 70,000 tons above the corresponding prestrike figure. During the week ended Nov. 27 output was 2,324.000 tons.

Approximate export quotations for best Durham steam and best Welsh Admiralty are about 32s. each a ton ($7.68).

British restrictions on exports of coke and anthracite were removed, effective Dec. 13, thus completing the removal of all coal export restrictions in the United Kingdom. states a cable to the Department of Commerce from London.

Sharp Drop in Exports

Exports of bituminous coal from five leading Atlantic ports of the United States during the week ended December 11, as compared with the two preceding weeks were as follows, according to preliminary figures supplied the Minerals Division. Department of Commerce by the U. S. Customs Service:

Port	Week Ended Nov. 27 Gross Tons	Week Ended Dec. 4 Gross Tons	Week Ended Dec. 11 Gross Tons
New York..	.....	9,899	15,300
Philadelphia	124,058	114,389	128,689
Baltimore...	252,507	267,653	.....
Norfolk.....	341,260	257,177	331,092
Charleston..	14,116	31,324	27,409
Total.....	731,941	660,352	502,490

Export Clearances, Week Ended Dec. 16

FROM HAMPTON ROADS

For United Kingdom:	Tons
Amer. Str. George Allen	7,471
Span. Str. Strota Mendi	8,051
Br. Str. Kepwith Hall	7,008
Br. Str. Northwestern Miller	8,036
Br. Str. Anglo Chilean	11,638
Br. Str. Poplar Branch	7,297
Br. Str. Hyacinthus	7,657
Ger. Str. Passat	9,315
Br. Str. Valemore	7,037
Ger. Str. Adline Hugo Stinnes	6,435
Br. Str. Dornholme	5,493
Br. Str. Telesforda de Larrinaga	8,878
Br. Str. Pearlmoor	7,566
Gr. Str. Grelstone	6,725
Br. Str. Catherine Radcliffe	8,265
Br. Str. Neatsfield	7,230
Br. Str. Manhattan	9,890
Br. Str. Tartar Prince	6,966
Br. Str. Bellailsa	6,986
Br. Str. Burmese Prince	6,041
Br. Str. Greldon	7,073
Br. Str. Shakespear	7,987
Br. Str. Holtby	5,492
J.-S. Str. Vojvoda Putnik	8,243
Belg. Str. Indier	6,846
For Brazil:	
Br. Msp. Baron Dalmeny, for Rio Janeiro	5,706
Br. Str. Rhymney, for Santos	6,997
Br. Str. Norman Monarch, for Rio Janeiro	6,477
Grk. Str. Nereus, for Rio Janeiro	8,480
For Argentina:	
Grk. Str. Vassolios Pandelis, for Buenos Aires	5,976
Br. Str. Leominster, for Rosario	4,848
Br. Str. Southlea, for Buenos Aires	5,347
Du. Str. Lekhaven, for Buenos Aires	5,932
Ital. Str. Mincio, for Buenos Aires	6,675
For West Africa:	
Ital. Str. Enrichetta, for Dakar	7,092
For Portugal:	
Br. Str. Antar, for Lisbon	9,609
For England:	
Br. Str. New Colombia, for Liverpool	8,032
Ital. Str. Valverde, for Chatham	6,243
Br. Str. Hallside, for London	4,354
Br. Str. Glenfinlas, for London	4,785
Br. Str. Kumara, for Mersey River	6,588
Br. Str. Blairesk, for Avonmouth	5,191
For Cuba:	
Br. Str. Emperor of Halifax, for Havana	3,484
Nor. Str. Askeladden, for Havana	3,732
Nor. Str. Thorgerd, for Santa Cruz del Sur	3,605
Nor. Str. Certo, for Cienfuegos	3,160
For Spain:	
Br. Str. Newnham, for Malta	3,308
For Nova Scotia:	
Br. Str. Sambro, for Halifax	979
For Egypt:	
Nor. Str. Belpariel, for Port Said	9,865
For Italy:	
Ital. Str. Elio, for Genoa	639
Br. Str. Warwork, for Genoa	7,147
Ital. Str. Vallescura, for Porto Ferrajo	6,956
Br. Str. Benvannoch, for Naples	6,497
For Dominican Republic:	
Ger. Str. Jersbek, for San Domingo	1,738
Ger. Str. Erich Lindel, for San Domingo	918
For Bermuda:	
Amer. Schr. Alice L. Pendleton, for St. Georges	1,674
For Denmark:	
Nor. Str. Storviken, for Copenhagen	6,674
For Cape Verde Islands:	
Amer. Str. Frieda, for St. Vincent	4,594
Amer. Str. Commercial Pioneer, for St. Vincent	3,439
For British West Indies:	
Br. Str. Dowanhill, for St. Lucia	3,557
For France:	
Fr. Str. P. L. M. 27, for Marseilles	7,832
Br. Str. Marchioness of Bute, for Havre	6,546
For New Brunswick:	
Nor. Str. Ottar, for St. Johns	1,768
For Jamaica:	
Nor. Str. Solhaug, for Kingston	2,212

FROM BALTIMORE

For England (for Queenstown for orders unless otherwise specified):	
Br. Str. Salmonpool	7,714
Br. Str. Sylvia de Larrinaga	7,152
Br. Str. Fernlea	7,042
Br. Str. Zurichmoor	6,600
Span. Str. Guetaria	4,655
Br. Str. Koranton	9,863
Br. Str. Apsley Hall	7,907
Ger. Str. Pollux	4,489
Am. Str. Albert Jeffress	7,576
Br. Str. Mabriton	9,888
Br. Str. Alistruther	5,703
Br. Str. King Bleddyn	9,322
Br. Str. Pacific Transport	7,029
Am. Str. Carolinian	5,618
Br. Str. King Malcolm	8,621
Grk. Str. Ithakos	6,007
Ital. Str. Raffaello	4,704
Br. Str. Lingfield	6,665
Br. Str. Toberton, for Barry Roads	460
Du. Str. Randwyk	3,504
Br. Str. Raisdale	6,468
Br. Str. Manchester Hero	7,311
Br. Str. Lesreaulx	7,627
Br. Str. Roman Prince	7,372
Du. Str. Thuban	5,160
Ital. Str. Kossuth	5,117
Ger. Str. Tagila	3,736
Ital. Str. Ardeto	7,530
Br. Str. Janeta	6,366
Br. Str. Glenluce	8,121
Br. Str. Oxonian	7,915
Br. Str. Southgate	7,999
Br. Str. Penrose	6,000
Br. Str. General Botha	7,822
For Ireland:	
Ital. Str. Orveto, for Cork	595
Br. Str. Terr Head, for Belfast	6,389
Br. Str. Shelley, for Belfast	6,561
For Italy:	
Ital. Str. Patria, for Leghorn	6,314
Ital. Str. Corsinia, for Genoa	6,405
Ital. Str. Buccari, for Leghorn	6,134
Ital. Str. Villa Ada, for Naples	6,827
Ital. Str. Giovanni, for Civitavecchia	9,435
For France:	
Nor. Str. Songa, for Dieppe	3,747
Nor. Str. Belnor, for St. Nazaire	3,624
Br. Str. Phyllis Seed, for La Pallice	3,289
Belg. Str. Elzasier, for Havre	7,135
For Canary Islands:	
Br. Str. Grangepark, for Las Palmas	6,952
Br. Str. Elm Park, for Santa Cruz	7,412
Grk. Str. Dionyssios, Stathatos for Las Palmas	7,156
For Brazil:	
Br. Str. Trekieve, for Rio Janeiro	6,068
For Argentina:	
Br. Str. Marthara, for Buenos Aires	6,583
Br. Str. Barrhill, for Buenos Aires	6,623
For Palestine:	
Br. Str. Twyford, for Haifa	4,919
For Egypt:	
Br. Str. Beckenham, for Alexandria	1,400
For French West Indies:	
Am. Str. Purnell T. White, for Guadalupe	1,108

FROM PHILADELPHIA

For United Kingdom:	
Fr. Str. Anglet, Span. Str. Astei Mendi, Du. Strs. Leersum and Beverwijk, Br. Strs. Farnsworth, Clan MacBride, Induna, Padua, Pikepool and Greibank	——
For Cuba:	
Dan. Str. Ketenia, for Havana	——
Dan. Str. Niels R. Finnsenn	——
Am. Sch. Snetine, for Caibarien	——
For Newfoundland:	
Nor. Str. Skagatind, for St. Johns	——
For Spain:	
Br. Str. Garlock, Ital. Str. Carmania	——
For Denmark:	
Str. P. N. Damm, for Odense	——
For France:	
Fr. Str. P. L. M. 20, for Marseilles	——
For Brazil:	
Dan. Str. Svandeborgsund, Br. Strs. Aborn and Ayuruoca, for Rio Janeiro	——
For Argentina:	
Br. Str. N. Cornwall, for Buenos Aires	——

Hampton Roads Coal Dumpings*

(In Gross Tons)

	Dec. 9	Dec. 16
N. & W. Piers, Lamberts Pt.:		
Tons dumped for week	276,646	223,644
Virginian Piers, Sewalls Pt.:		
Tons dumped for week	119,655	152,132
C. & O. Piers, Newport News:		
Tons dumped for week	230,135	261,305

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

Pier and Bunker Prices, Gross Tons

PIERS

	Dec. 9	Dec. 16†
Pool 1, New York	$6.50@$6.75	$6.50@$6.75
Pool 9, New York	5.75@ 6.25	*5.50@ 5.75*
Pool 10, New York	5.50@ 5.65	*6.25@ 6.50*
Pool 11, New York	5.00@ 5.25	*4.75@ 5.25*
Pool 9, Philadelphia	5.70@ 6.20	5.70@ 6.20
Pool 10, Philadelphia	5.50@ 5.75	*5.10@ 5.30*
Pool 11, Philadelphia	5.20@ 5.40	*4.80@ 5.10*
Pool 1, Hamp. Roads	5.60@ 5.75	*5.40*
Pool 2, Hamp. Roads	5.30@ 5.55	*5.20*
Pool 3, Hamp. Roads	4.85	**5.05@ 5.15**
Pools 5-6-7, Hamp. Rds.	5.00@ 5.15	*4.75*

BUNKERS

Pool 1, New York	$6.75@$7.00	$6.75@$7.00
Pool 9, New York	6.00@ 6.50	*5.75@ 6.00*
Pool 10, New York	5.75@ 5.90	*5.50@ 5.75*
Pool 11, New York	5.25@ 5.50	*5.00@ 5.50*
Pool 9, Philadelphia	5.95@ 6.45	5.95@ 6.45
Pool 10, Philadelphia	5.75@ 6.00	*5.35@ 5.55*
Pool 11, Philadelphia	5.45@ 5.65	*5.05@ 5.35*
Pool 1, Hamp. Roads	5.75	*5.50*
Pool 2, Hamp. Roads	5.50	*5.30*
Pools 5-6-7, Hamp. Rds.	5.00	*4.85*

†Advances over previous week shown in **heavy type**, declines in *italics*.

Coming Meetings

Monongahela Coal Association. Annual meeting, Jan. 13, at Morgantown, W. Va. Secretary, D. H. Pape, Morgantown, W. Va.

American Society of Civil Engineers. Annual meeting, Jan. 19-21, 1927, at Engineering Societies Bldg., New York City. Secretary, George T. Seabury, 29 West 39th St., New York City.

American Wood Preservers' Association. Annual meeting, Jan. 25-27, 1927, at Nashville, Tenn. Secretary, E. J. Stocking, 111 W. Washington St., Chicago, Ill.

Philadelphia Coal Club. Annual meeting, Jan. 27, 1927, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, Charles K. Scull, Philadelphia, Pa.

Northeast Kentucky Coal Association. Annual meeting, Jan. 27, 1927, at Ventura Hotel, Ashland, Ky., Secretary, C. J. Neekamp, Ashland, Ky.

American Institute of Electrical Engineers. Midwinter convention, Feb. 7-10, Engineering Societies Bldg., New York. Secretary, F. L. Hutchinson, 33 W. 39th St., New York City.

American Institute of Mining and Metallurgical Engineers. Annual meeting, Feb. 14-17, 1927, Engineering Societies Bldg., New York City. Secretary, H. Foster Bain, 29 West 39th St., New York City.

Second Midwest Power Conference, under the auspices of the American Institute of Electrical Engineers, American Society of Mechanical Engineers, American Institute of Mining and Metallurgical Engineers, National Electric Light Association, Western Society of Engineers and National Safety Council, Feb. 15-18, 1927, at the Coliseum, Chicago, Ill. Secretary, G. E. Pfisterer, 53 West Jackson Blvd., Chicago, Ill.

New Companies

The Sterling Smokeless Coal Co., of Mt. Hope, W. Va., has just been organized to engage in the mining of coal in Fayette County. The concern is capitalized at $200,000. Incorporators are T. H. Snyder, Dewitt C. Snyder, R. Snyder, P. M. Snyder, Jr., and P. C. Graney, all of Mt. Hope.

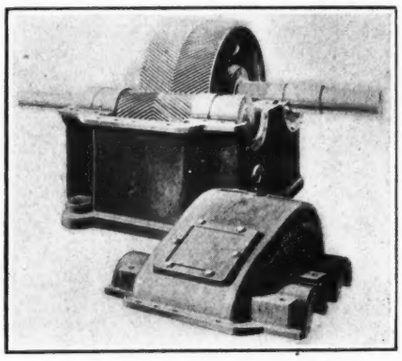
The C. C. Realty Co. has been granted a state charter to engage in mining, the real estate business, building and amusement in Fairmont, W. Va. The incorporators are Brooks Fleming, Jr.; C. W. Watson, H. F. Giffin, of Fairmont, and George J. Anderson and H. H. Snoderly, of New York City.

The Mason Coal Co., Inc., of Staunton, Va., with capital stock of $25,000 to $100,000, has been chartered by the Virginia Corporation Commission to operate coal mines. The incorporators are Hugh B. Sproul, president; A. Erskine Miller, secretary, and John Stott, all of Staunton.

New Equipment

Smoothness in Operation Gives Longer Life

The manufacture of speed reducers using herringbone gears has been announced by the D. O. James Mfg. Co., 1122 W. Monroe St., Chicago, Ill. These units are being built in reduction ratios



Smooth in Action and Noiseless

Shocks, it is claimed by the manufacturer, are eliminated by using herringbone gears which makes the action smooth and noiseless when the load passes from one tooth to another.

of from 2 to 1, to 150 to 1, and in capacities of from 2 hp. to 200 hp. The company states that these reducers are being built to fill a demand for heavy, rugged and durable types, especially where heavy equipment is driven.

On account of using herringbone gears the builder claims that all backlash and play are practically eliminated which gives longer life because there is less resulting shock vibration and friction. The design has provided for overlapping action which gives smoothness and is also noiseless.

Welds Automatically

A new design of automatic arc welder that functions with great smoothness, speed and accuracy, has been introduced by the General Electric Co., Schenectady, N. Y. With this equipment, the operator needs but to push a button to start the sequence of operations which produce the weld without any further effort or skill on his part.

Starting the arc by first touching the electrode to the work and then withdrawing it, the new welder thereafter maintains a constant arc length by feeding the electrode wire to the weld at the exact rate necessary to replace the electrode fused into the weld. It is claimed that the new equipment will perform these operations more rapidly and with a greater degree of accuracy than is possible by the most expert hand operators.

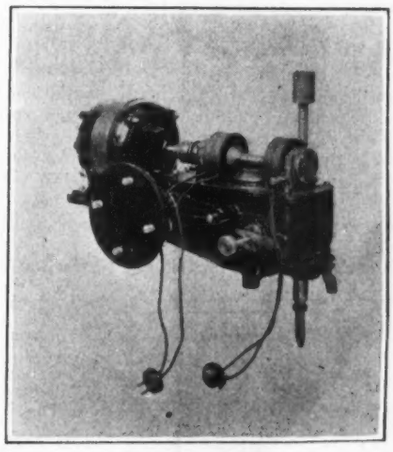
Incorporated in the automatic welding head is the necessary mechanism for feeding the electrode to the arc. This consists essentially of a pair of feed rollers geared to a constant speed motor through a magnetic clutch. The gearing and feed mechanism are contained in one housing to which the motor is bolted.

The feed rollers feed the welding wire through the nozzle to the arc. The distance and pressure between these rollers are readily adjustable. Each welding head is equipped with a set of nozzles for $\frac{5}{32}$-in., $\frac{1}{8}$-in., $\frac{5}{32}$-in., $\frac{3}{16}$-in. and $\frac{1}{4}$-in. wire.

Speed adjustment of the feed wire may be made by means of a selective gear changer which permits the gear ratio to be altered at will to adapt the speed of the feed rollers to the size of wire and the welding current used. Three gear speed changes can be made by moving the gear shift pin which extends from the rear of the gear housing. An additional finer adjustment can be made by means of a rheostat in the field of the motor.

Provision is made for pointing the electrode backward or forward in the line of weld, and also for moving it sideways. The pointing of the electrode is obtained by rotating the head on its horizontal shaft, and the lateral movement by means of the handwheel on the front of the head.

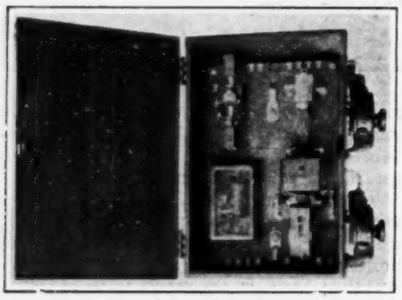
Control equipment consists of a control panel, a meter panel and a push-button station. The control panel mounts the main-line contactor for the welding circuit and two smaller contactors for interlocking the travel motor with the arc. By means of auxiliary contacts, the line contactor controls the starting and stopping of the feed motor. The magnetic clutch is operated forward or backward by a voltage relay, the coil of which is connected across the arc. Thus the electrode is fed to or from the work automatically, adjusting itself to any irregularities in the surface. One rheostat controls the speed of the feed motor and the other the voltage setting of the arc.



Controls the Arc

This device feeds the electrode to the arc at the exact rate necessary to replace the electrode weir fused in the weld. Speed adjustment is obtained by a selective gear changer and may be altered at will.

The new automatic arc welder will find its principal application in the construction of standard products where



Handles the Feed Motor

The control panel mounts the main-line contactor for the welding circuit and the two smaller contactors are for interlocking the travel motor with the arc. By means of auxiliary contactors the starting and stopping of the feed motor is controlled.

the welding operation is constantly repeated as part of a regular production schedule.

Improved Condenser Tube Cleaner and Gun

An improved type of condenser tube cleaner and a gun for holding the nozzle in the tubes when using high-

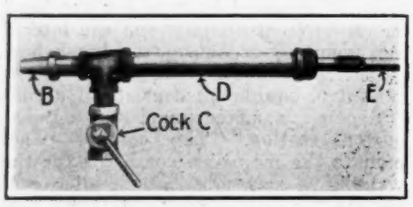


Fig. 1—The Tubes Get "a Close Shave"

This device is fitted with a number of specially formed scrapers, *A*, which fit the tube closely and tend to shave the deposits from the tube's surface.

pressure water are recent additions to the condenser cleaning equipment put out by the Condenser Cleaners Manufacturing Co., 422 First Ave., Pittsburgh, Pa.

The improved cleaner shown in Fig. 1 is fitted with a number of specially formed scrapers, *A*, which fit the tube closely and tend to shave the deposits from its surface.

The gun shown in Fig. 2 is designed for use in cleaning large condensers where the head is not removed and where high-pressure water is necessary to force the cleaner through the tubes. The operation of the gun is as follows: The nozzle *B* is placed in the end of the tube and when the water is turned on at the cock *C*, a piston in the cylinder *D* moves out until the extension *E*

Fig. 2—Cleans the Large Condensers

This gun is designed for use in cleaning the large condensers where the head is not removed and high pressure water is necessary to force the cleaner through the tubes.

comes against the condenser head and serves to hold the nozzle in the tube.

The cleaners are made in ⅝-, ¾-, ⅞- and 1-in. sizes.

New Pinion Puller Is Light, Quick and Safe

Speed, light weight and safety are claimed by the Duff Mfg. Co., Pittsburgh, Pa., for a new pinion puller that this firm has just announced.

This pinion puller is quickly attached and a few strokes of the lever bring the device into full tension and a further operation removes the pinion. Three sizes are available for various sizes of pinions, pulleys and flywheels. The housing and the jaws are made of case-hardened steel, and ball bearings are used throughout. According to the manufacturer a uniform force is exerted around the entire circumference of the pulley.

Meter Reads Volts or Amperes, Either A.C. or D.C.

With the increasing interest in the more efficient use of current both alternating and direct, the mine electrician is more and more coming to the use of testing instruments. The Martindale Electric Co., Cleveland, O., has announced a new combination ammeter and voltmeter that can be used for either alternating or direct current. This instrument is known as the Martindale universal portable ammeter and voltmeter.

It consists of a separate voltmeter and ammeter mounted together in the same case, in which space is also provided for five ammeter shunts, rated at 5, 10, 50, 100 and 300 amp. respectively. The voltmeter has an internal resistance of such value that the full scale may be 75, 150, 300 or 600 volts, depending upon which binding posts are used. This instrument is so constructed that either meter may be removed from the case and used separately.

Trade Literature

The Conway Shovel. St. Louis Power Shovel Co., St. Louis, Mo. Pp. 8; 8½x11 in.; illustrated. Describes and illustrates the three major elements comprising this shovel, which are the mine locomotive frame, dipper and belt conveyor.

Gasoline Hoists. Lidgerwood Mfg. Co., New York City. Bulletin 8. Pp. 15; 8½x11 in.; illustrated. Describes hoists for different uses, developed to meet the demands for a self-contained unit.

Silent Gears. General Electric Co. Schenectady, N. Y. GEA-482. Pp. 27; 8x10½ in.; illustrated. The construction of fabroil and the manufacture and characteristics of textoil and textolite materials used in silent gears are illustrated and described.

"Sirocco" Fans and Blowers. American Blower Co., Detroit, Mich. Bulletin No. 8001. Pp. 80; 8½x11 in.; illustrated. Contains a brief description of the "Sirocco" fan, together with complete capacity and dimension tables for the engineer's use.

Hytempite in the Power Plant. Quigley Furnace Specialties Co., New York City. Pp. 23; 8½x11 in.; illustrated. Describes and illustrates some of the applications of hytempite in refractory construction and maintenance, the use of crushed old fire brick for patching and rebuilding furnace walls, and tells how the refractory gun is used for applying plastic refractory materials.

Type "SE" Steel Plate Blower. American Blower Co., Detroit, Mich. Bulletin No. 2004. Four-page folder describing this type of blower, which has been developed especially for heavy duty blowing applications.

Recent Patents

Coal-Mining and Loading Machine; 1,603,621. Edward S. McKinlay, Denver, Colo., assignor to McKinlay Mining & Loading Machine Co., Denver, Colo. Oct. 19, 1926. Filed April 26, 1923; serial No. 634,909. Renewed Jan. 21, 1926.

Grease Gun; 1,603,752. John W. Ellis, Barnesville, Ohio, assignor to the Watt Mining Car Wheel Co., Barnesville, Ohio. Oct. 19, 1926. Filed June 9, 1924; serial No. 718,931.

Safety Device for Crushers; 1,603,765. John S. Haas and Richard Bernhard, Allentown, Pa., assignors to the Traylor Engineering & Manufacturing Co., Allentown, Pa. Oct. 19, 1926. Filed May 27, 1926; serial No. 112,173.

Clamshell Bucket; 1,604,284. Edward L. Harrington, Erie, Pa., assignor to G. H. Williams Co., Erie, Pa. Oct. 26, 1926. Filed Sept. 25, 1924; serial No. 739,941.

Vibrating Screen; 1,604,324. George M. Stedman, Aurora, Ind. Oct. 26, 1926. Filed March 27, 1925; serial No. 18,858.

Alternating Current Motor; 1,604,431. Hans Weichsel, St. Louis, Mo., assignor to Wagner Electric Corp., St. Louis, Mo. Oct. 26, 1926. Filed May 15, 1924; serial No. 713,423.

Gauge Cock for Boilers; 1,604,578. E. H. Hostler, Lyman, Okla. Oct. 26, 1926. Filed May 12, 1925; serial No. 29,768.

Mining and Loading Apparatus; 1,604,701. Nils D. Levin, Columbus, Ohio, assignor to the Jeffrey Mfg. Co., Columbus, Ohio. Oct. 26, 1926. Original application filed Aug. 7, 1917; serial No. 184,946. Divided and this application filed Feb. 10, 1919; serial No. 276,024.

Steam Generator for Internal Combustion Engines; 1,604,702. Jay B. Lupher, Chanute, Kan. Oct. 26, 1926. Filed Aug. 27, 1925; serial No. 52,947.

Safety Appliance for Mine Cars; 1,605,003. E. W. Schuessler, Birmingham, Ala. Nov. 2, 1926. Filed Aug. 31, 1925; serial No. 53,681.

Electric Headlamp for Miners; 1,605,019. Paul Wolf, Zwickau, Germany, Nov. 2, 1926. Filed June 9, 1925; serial No. 35,963.

Apparatus for Softening Water; 1,605,652. Andrew J. Dotterweich, Pittsburgh, Pa. Nov. 2, 1926. Filed May 19, 1925; serial No. 31,313.